International Management Digest®

O.S.

APRIL 1960
ONE DOLLAR

THE McGRAW-HILL PUBLICATION OF WORLD BUSINESS INFORMATION

Japan Between Two Worlds

Yankees Bet on Research

Fancy Finance Builds a Pipeline

Light Touch in Advertising

Boom in Blow Molding

See Contents p.6

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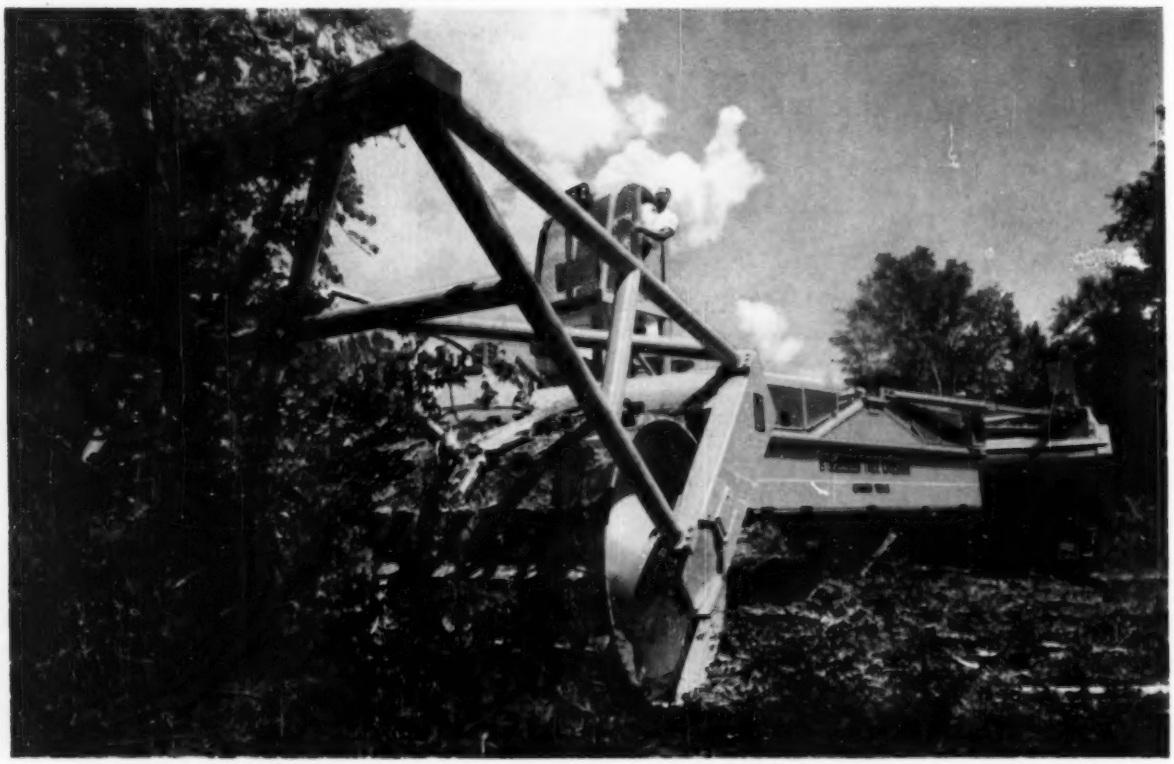

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INTERNATIONAL MANAGEMENT'S

American Letter

Dear Sir: April, 1960

THE EUROPEAN COMMON MARKET WILL BE TAKING SHAPE MUCH FASTER THAN EXPECTED. That is the basic fact behind the past month's confused maneuverings. The European Economic Community--Germany, Italy, France, and Benelux--is making it clear that it aims for real economic union, not just a customs union (note new proposals for equal pay for women and unfettered flow of investment funds within the area). And the job may be close to completion by 1964-66, instead of the scheduled 1970-72.

Note the chronology: A late March-early April meeting of all Europeans and the U.S. and Canada, trying to resolve conflicts arising out of the EEC speed-up. The speed-up begins July 1 when EEC nations plan to cut tariffs among themselves by 20% (instead of 10% as planned), and start moving toward a common external tariff against outsiders (instead of waiting until December '61). In September, all free world trading partners begin tariff negotiations among themselves and the EEC.

WHAT DOES IT ALL MEAN TO OUTSIDE BUSINESSMEN? They will be dealing with a single market entity much sooner than they anticipated. They can expect some immediate trade discrimination as the Six favor each other at the expense of outsiders. Also more rapid imposition of the common external tariff means that Benelux tariffs will rise, French and Italian levies will fall, West German tariffs will hold steady. Faster formation of the common external tariff should give the world an earlier opportunity to bargain for tariff concessions with the Six as a unit.

Fortunately, the EEC's thinking seems to be taking a liberal bent, carrying the promise of significant tariff concessions to outside trading nations.

The "Outer Seven" Free Trade Area does not look so viable now. There is growing doubt whether the British-led FTA's tariff-cutting schedule can keep up with the EEC's, whether a special relationship (i.e., a "bridge") can be built to link the two groups. If the British scheme for all-European regional trade preferences is stillborn, the Seven can expect to face the same discrimination in dealing with the Six as will the North Americans--and everyone else outside Europe.

THE U.S.A. STANDS SOLIDLY BEHIND THE SPEED-UP OF THE SIX. (in fact, U.S. officials, working behind the scenes, helped draft the plan). Washington never liked the free trade area plan, and worried about a preference system involving the Six and the Seven in which it and other outsiders might be hurt. U.S. strategy is to hurry EEC into being--despite some trade dislocation--and exert all efforts to push the bloc's external tariff as low as possible. One official explains: "Instead of trying to build a bridge between the Six and Seven we want to keep the water (tariff) level low enough so that all can wade across safely."

There's an important political aspect to Washington's firm stand behind EEC. The U.S.A. will do nothing that might upset Chancellor Adenauer, General de Gaulle, and the Franco-German entente--foundation stone of the Six.

American Letter

THERE'S A REASON BEHIND THIS U.S. INVOLVEMENT IN EUROPEAN MANEUVERING (page 1). It is the need to increase U.S. exports. Washington worries that regional barriers in Europe (and elsewhere) will strengthen the hand of protectionists and others at home who want to change the government's liberal foreign economic policies.

Despite optimistic talk in Washington, U.S. exports have not so far measured up to expectations, and high officials are privately quite concerned about the possibility of another large payments deficit in 1960. Their worry: If the U.S. still runs a sizable deficit at a time when cyclical forces favor its exports, when world markets are expanding, what will happen when business turns down?

Meanwhile, the U.S. program to encourage exports has not been moving ahead as smoothly as hoped for (IMD--Feb,p1). There has been disagreement in government over what to do; as for private businessmen, they seem more interested in establishing foreign plants than pushing made-in-U.S. products. But you can expect--probably soon--some form of official guarantees for liberal, medium-term export credits. This is one thing that exporters agree they need to compete.

NOTE HOW AMERICAN MANUFACTURERS BEGIN TO USE PATRIOTISM TO COMBAT IMPORTS. There is more "buy American" sloganeering in sales messages--such as "guaranteed quality American components" (for a radio) or "built in America for Americans" (an auto). But it is usually more than mere propaganda: Evidence is mounting that management is embarked on a sustained effort to improve products and, above all, cut costs.

* * * *

"IT IS GETTING HARDER AND HARDER TO MAKE A KILLING." This remark from a speculation-minded U.S. investor who, like many other "smart-money" men, was caught by surprise in the 1960 drop in Wall Street stock prices. Many sustained sizable losses, and volume on the stock markets receded along with prices. Lately, interest in equities has returned, but with this difference: Even the fast-moving speculators are looking ahead months rather than weeks, and some are showing an unaccustomed interest in fixed-income securities. Meanwhile, many big investors are simply holding back. "I just haven't liked any deals I've been offered," says a man who has investigated everything from South African gold mines to Latin American land.

Real estate still offers opportunities. Business Week tells of two operators in Florida who netted $750,000 in seven weeks. They bought a large tract for $2.5-million, with a down payment of only $150,000. Before the next payment was due they had carved up the property and sold the pieces for more than $3.25-million.

And take a look at Beirut, Lebanon, for unique real estate operations. Until recently speculators built apartment blocks for a quick return from high rents. Now apartments are built almost exclusively for quick resale to oil-rich sheikhs (Kuwaitis and Saudis invested $40-million in Beirut apartments last year).

How long can this go on? There are 10,000 empty flats in new apartment buildings. Yet Lebanese say the sheikhs still "pay any price for an apartment building so long as it overlooks the Mediterranean, has colorful panels and a marble entrance."

"YOU WIN THE CONTRACT--BUT BRING YOUR OWN FINANCING." Argentina is speeding major projects with this unorthodox technique, and construction firms are becoming skilled at raising funds. The huge pipeline venture of the U.S.A.'s Virgil Stark is a classic example (see "Finance" on another page). Now comes a Venezuelan builder, with a neat $23.5-million Argentine highway-airport project won on the strength of its ability to find private financing overseas. (The contractors will buy new equipment--$4-million worth--in the U.S. and Europe.)

The deal is attractive to the Venezuelans because construction at home is suffering from a tightening in the nation's finances. But elsewhere in Latin America, work under way or proposed for 1960 amounts to a healthy $19,897-million, up 10% over 1959 (part of the rise reflects the inflation factor). According to McGraw-Hill's "Construcción," Argentine spending will be up 36% this year, Chile's over 50%. Mexico and Colombia will also spend substantially more. In Brazil, tight credit is pinching the 1960 program, but a slight increase is projected.

* * * *

LOOKING FOR A SITE TO ACCUMULATE TAX-FREE OVERSEAS EARNINGS? Puerto Rico, the Caribbean Commonwealth associated with the U.S.A., may soon join Switzerland, Liberia, Liechtenstein, Panama, Bermuda, the Bahamas, etc., in the ranks of "tax havens" for international business operations. A nominal tax of 5% (on foreign income--not including earnings from continental U.S.) is under study in Puerto Rico. And there is a possibility that there will be no tax at all.

Some 500 U.S. corporations doing business abroad are showing interest. So are some Europeans and others. Thanks to its position inside the U.S. currency system, stable, well-run Puerto Rico may have an advantage over other tax shelters.

Puerto Rico offers a new foreign trade zone, to open in July, as a further lure to world business. The same tax exemptions which have already attracted 600 U.S. manufacturing firms to the island under its development program will be extended to qualified candidates for the zone. Makers of drugs, textiles, plastics, cameras, watches, light metal products who distribute internationally are considered prospects--and there is a report that two European auto producers are thinking of assembling there for Western Hemisphere markets.

* * * *

NEW & NOTEWORTHY: An electronic machine combs cotton fibers, then automatically measures their length to .02 cm. accuracy--three times faster than a skilled worker. From Spinlab Corp., Nashville, Tennessee, U.S.A.

Scents & Tints: Fragrance Process Co. (New York, N.Y.) has a polyethylene resin concentrate with aromas built in--for packaging perfumes, lingerie, candy, etc. (there's even a "clean linen" smell for laundry wrapping) .....Esso Research & Engineering, also New York, has a practical means of coloring highway, airport, drives, tennis court surfaces with a pigmented plastic.

VEB Carl Zeiss-werke of Jena, owned by the East German state, claims a highly-accurate, automatic surface weight meter which uses radioactive isotopes. Zeiss expects it to be especially useful in paper, film, plastics industries.

(For more new developments, see "Product Digest" on another page)

WATCH OUT FOR DECEPTIVE LABELS ON PRODUCTS MOVING IN WORLD TRADE. It is a problem everywhere--and especially in the U.S.A., where import-conscious businessmen are complaining to Washington. Such products as electrical supplies, auto parts, tools, some consumer goods (cigarette lighters, etc.) are involved, usually in a way that tries to conceal their foreign origin. There may be cases of re-export: An item labeled and packaged to suggest that it is made-in-U.S.A. when it is not.

Government efforts to secure voluntary policing by overseas suppliers are increasing. And a tough labeling law is expected in the U.S. Congress.

* * * *

JAPANESE WILL BE SETTING UP MORE MANUFACTURING OPERATIONS ABROAD. You may have noted Japanese plans to make or assemble autos in Holland, radios in Eire, cameras in Italy, foods in Thailand. Latest venture: The big Matsushita electric company (IMD--Feb'59,p14) plans to visit Cairo next month, to discuss setting up transistor radio and battery manufacturing plants in cooperation with local capital. The strategy is to supply Matsushita's growing Middle East markets from Egypt.

For a closer look at Japan's world business plans and problems, see page 13.

A QUICK REVIEW OF EXCHANGE, CREDIT, AND BUSINESS CONDITIONS

Country	Exchange Rate (units per $1) New York free market			Government Reserves (gold & foreign exchange, millions)		Dollars in U.S. Banks (Millions)	Conversion Delays / Collection Experience		Business Conditions
	5 March 1960		5 Feb. 1960	latest month	year ago				
Argentina	82.50	Peso	82.75	$ 221.0	$ 177.0	$ 337.0	2 Mos.	Fair-Good	Improving
Australia	• 2.23	Pound	• 2.23	1,157.0	1,120.0	114.0	None	Very-good	Good
Austria	25.65	Schilling	25.65	678.0	684.0	331.0	None	Good	Good
Belgium	50.00	Franc	50.00	1,211.0	1,408.0	138.0	None	Very good	Improving
Bolivia	12,000.00	Boliviano	12,000.00	8.7	6.6	24.0	4 Mos.	Fair	Poor-Fair
Brazil	184.00	Cruzeiro	182.00	455.0	478.0	151.0	3 Mos.	Fair-Good	Improving
Canada	.9501	Dollar	.9520	1,877.0	1,920.0	2,195.0	None	Very good	Improving
Chile	1.05	Escudo	1.05	105.2	69.1	185.0	2 Mos.	Good	Improving
Colombia	6.75	Peso	6.75	196.0	181.0	217.0	2 Mos.	Good	Improving
Costa Rica	6.67	Colon	6.67	13.5	24.50	24.5	1 Mo.	Good	Improving
Cuba	1.25	Peso	1.25	294.0	429.0	164.0	2 Mos.	Poor-Fair	Poor-Fair
Denmark	6.80	Krone	6.80	313.1	239.5	137.0	None	Very good	Good
Dom. Rep.	1.00	Peso	1.00	37.8	44.3	37.0	None	Good	Good
Ecuador	16.67	Sucre	16.67	39.8	34.8	17.4	1 Mo.	Fair-Good	Improving
El Salvador	2.50	Colon	2.50	37.7	38.2	28.0	1 Mo.	Fair-Good	Good
Finland	312.00	Markka	312.00	315.6	281.2	77.0	None	Good	Improving
France	4.95	Franc	4.95	1,720.0	1,200.0	652.0	None	Good	Good
Germany	4.17	D-Mark	4.17	4,779.0	5,625.0	1,993.0	None	Very good	Very good
Greece	29.41	Drachma	29.41	202.8	198.0	186.0	1 Mo.	Fair-Good	Improving
Guatemala	1.01	Quetzal	1.01	35.8	49.3	37.0	1 Mo.	Good	Improving
Honduras	2.00	Lempira	2.00	13.0	11.3	6.3	1 Mo.	Fair-Good	Fair
India	6.67	Rupee	6.67	695.0	694.0	114.0	1 Mo.	Good	Improving
Indonesia	200.00	Rupiah	200.00	301.0	238.0	139.0	3 Mos	#L/C Basis	Poor
Iran	76.92	Rial	76.92	213.0	228.0	47.0	3 Mos	Fair-Good	Improving
Iraq	• 2.70	Dinar	• 2.70	314.9	337.0	18.0	2 Mos.	#L/C Basis	Fair-Good
Israel	2.50	Pound	2.50	116.7	116.6	87.0	1 Mo.	#L/C Basis	Good
Italy	625.00	Lira	621.00	3,116.0	2,429.0	1,369.0	None	Very good	Good
Japan	392.00	Yen	392.00	1,105.0	939.0	1,250.0	None	Very good	Good
Mexico	12.35	Peso	12.35	385.0	402.0	442.0	None	Good	Very good
Netherlands	3.77	Guilder	3.77	1,355.0	1,420.0	485.0	None	Very good	Good
New Zealand	• 2.63	Pound	• 2.63	216.0	231.0	6.9	None	Very good	Good
Nicaragua	8.00	Cordoba	8.00	9.40	19.5	11.3	None	Very good	Good
Norway	7.14	Krone	7.14	242.4	227.8	95.0	None	Very good	Improving
Pakistan	6.50	Rupee	5.88	194.0	157.0	5.6	2 Mos	#L/C Basis	Improving
Panama	1.00	Balboa	1.00	45.7	52.3	129.0	None	Very good	Good
Peru	27.77	Sol	27.77	55.4	28.9	82.0	1 Mo.	Good	Improving
Philippines	3.45	Peso	3.57	89.0	78.0	172.0	1 Mo.	#L/C Basis	Improving
Portugal	28.17	Escudo	28.17	809.0	736.0	138.0	None	Very good	Good
South Africa	• 2.76	Pound	• 2.76	427.0	329.0	49.0	None	Very good	Very good
Spain	60.25	Peseta	60.25	54.0	57.0	86.0	None	#L/C Basis	Improving
Sweden	5.17	Krona	5.17	418.0	478.0	213.0	None	Very good	Good
Switzerland	4.33	Franc	4.33	2,052.0	2,046.0	966.0	None	Very good	Very good
Turkey	12.50	Pound	12.50	269.0	326.0	31.0	12 Mos.	#L/C Basis	Fair
U. A. R.	• 2.15	Pound	• 2.15	397.00	436.0	20.0	3 Mos	#L/C Basis	Fair
U. K.	• 2.8030	Pound	• 2.8030	2,721.6	3,155.6	955.0	None	Very good	Very good
Uruguay	11.11	Peso	11.11	180.0	180.0	62.0	1 Mo.	Fair-Good	Improving
Venezuela	3.34	Bolivar	3.34	776.0	1,151.0	277.0	1 Mo.	Fair-Good	Fair

*U.S. Dollars per Pound. #Most Exports by Letter of Credit

The Editors

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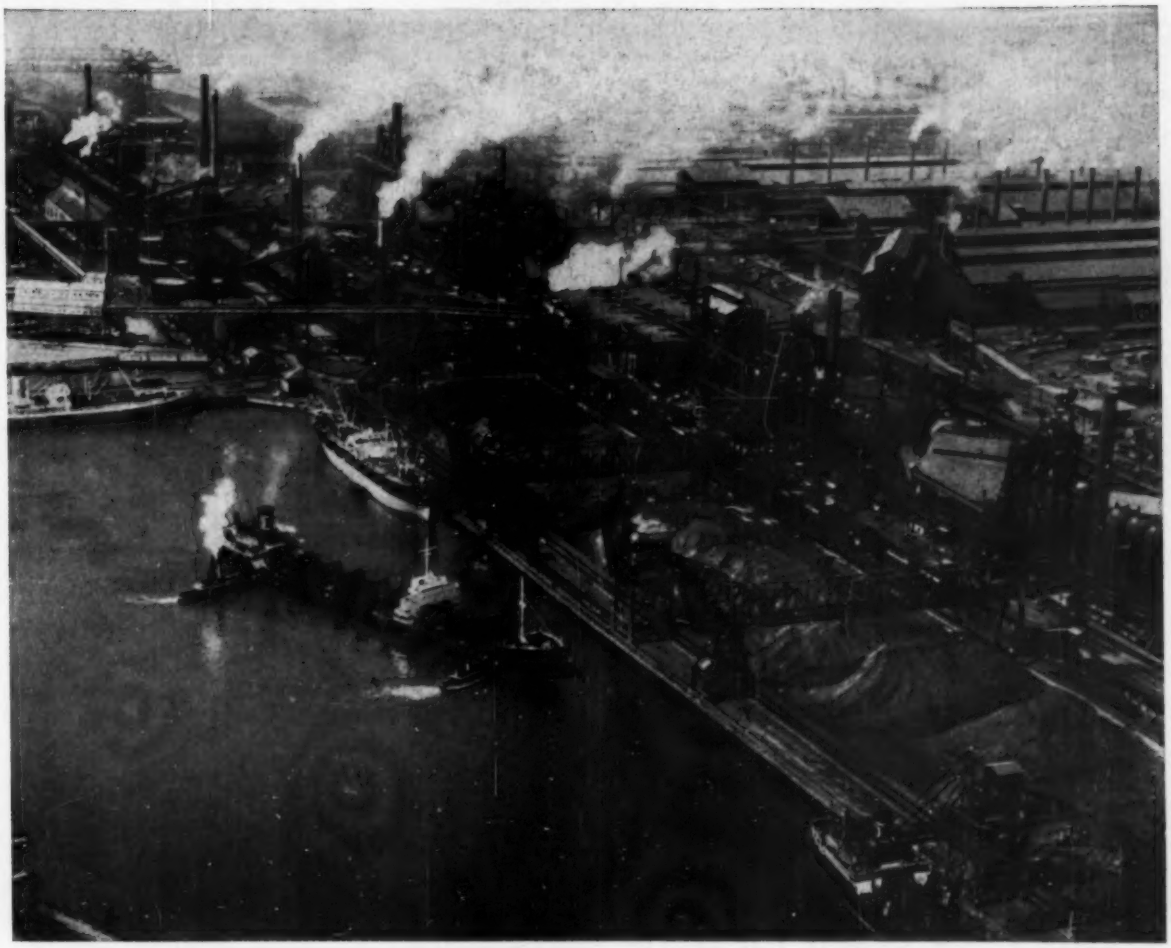
steelmaking at dockside



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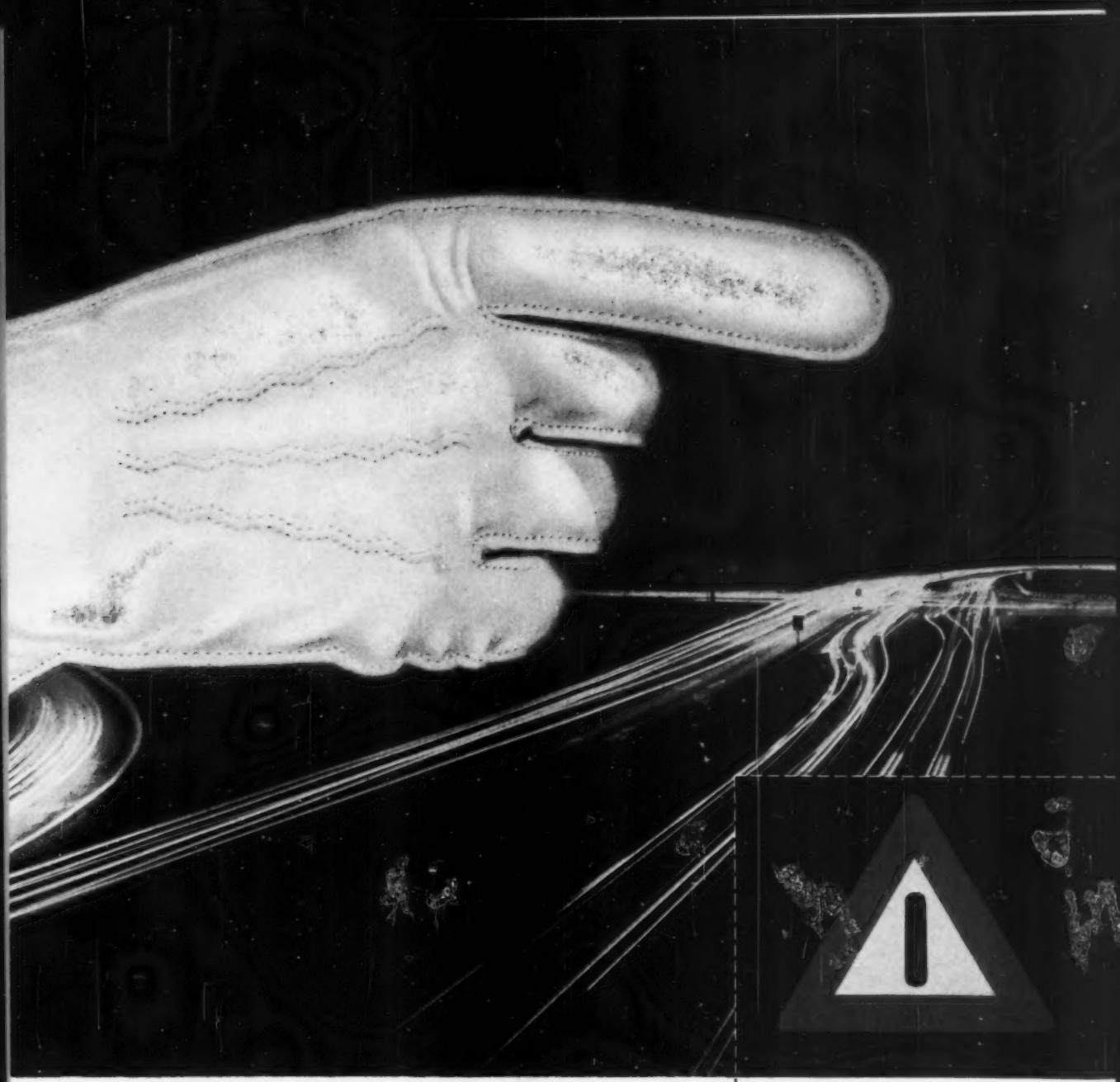

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The Wealth of Nations

THE LONE INVENTOR, working amid dusty test tubes in a kitchen workshop, penniless, perhaps eccentric and ridiculed by his contemporaries, is a familiar figure. In years past he was the one who produced, often accidentally, the innovations that made modern technology possible. His contribution was enormous. But it was sporadic, hit-or-miss. You could not count on it.

Now an important change in the process of innovation is occurring, and it is reaching full flower in the U. S. A. That is the discovery, by businessmen, that innovation need not be accidental, but can be planned for and systematized, and built on a foundation of vastly increased investment in research. Many American executives have deliberately set out to develop, year after year, new products and processes which they count on to keep their companies growing. The individual researcher still plays a critical role—but he is better trained, and he has at hand unprecedented finance, facilities, and encouragement.

The article on page 16 suggests the scope of the research and development effort in the U. S. A., now and in the decade to come. And a recent Special Report by the editors of McGraw-Hill's *Business Week* magazine discusses the impact of this effort on the problem of economic growth.*

The idea of "planned innovation" may, in the words of *Business Week*, mean a qualitative change in the economy, as important as the development of the concept of capital investment over the past two centuries. **Capital investment** represents consumption deferred in the interest of greater production later. **Planned innovation** carries the process a step further: It represents a charge against current production in the interest of greater investment—and greater productivity—later.

Think about this. If you can plan for innovations, as the Americans are now trying to do—and with some signs of success—you are close to the prime mover of economic growth. New products do not guarantee economic growth, to be sure. The immediate generator of growth is investment, and it is partly set in motion by a complex of economic, social, and political forces. But it is fair to say that basically investment arises from new ideas, from new developments in science and technology, from education and research—in a word, from innovation.

The problem of assuring adequate growth is the fundamental economic problem in the U. S. A. today, as it is in other industrial as well as industrializing nations. Many thoughtful Americans believe that their economy must grow at a strong rate in the decade ahead or suffer highly unpleasant consequences. Growth looms as a major issue in this year's election campaign as politicians, businessmen, and savants argue about which national policies will encourage growth.

There are no easy, prefabricated answers to the growth problem, for the U. S. A. or for the world generally. But one thing is sure: That which encourages innovation encourages growth. And innovation is nurtured by continuing large investment in research—to extend the frontiers of human knowledge and broaden human skills.

It comes back to that individual researcher again. The wealth of nations lies primarily in the qualities of their people.

The Editors

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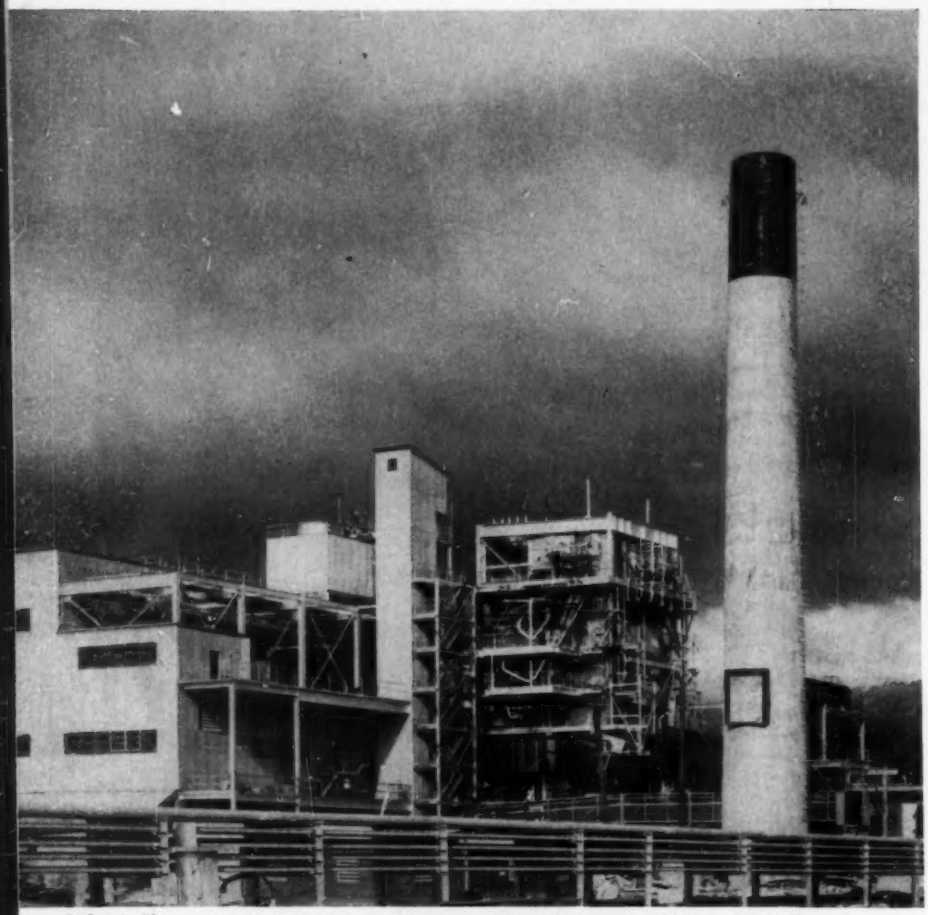
* *If you would like to read this report, "The United States Invents a New Way to Grow," write to us and we will send you a copy. Free as long as our supply lasts.*

General Electric Offers Electrical Equipment For Every Power Need...From Generation To Utilization



In Puerto Rico two 44,000 kw G-E turbine-generators provide power at this new South Coast generating plant located near Ponce. As recently as 1952, Puerto Rico's total generating capacity was only 174,560 kilowatts. Industrial expansion has created demands for considerably more power; by 1960 installed capacity is expected to reach 600,000 kw, and larger units are already on order for anticipated future requirements.

Dependable G-E Products Provide Power For Industrial Expansion All Over The World.

In many countries around the world, people are living better than ever before because of industrial growth, and General Electric equipment is playing a vital role in this expansion.

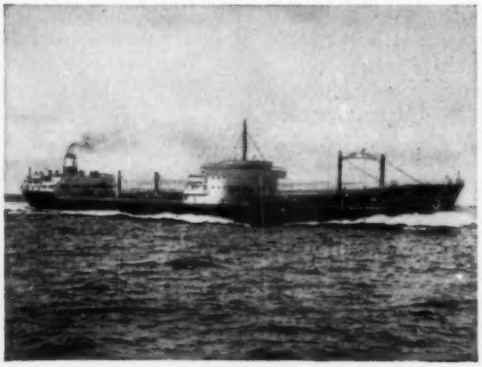
In the Middle East, unattended General Electric gas turbine units provide the power to pump crude oil 1,000 miles across the Arabian Desert. In Germany, the nuclear steam supply system for this country's first atomic power station is being supplied. As a part of its continuing research program, General Electric is developing an extra-high voltage transmission system that will allow entire cities to utilize low-cost power from distant water power sites.

Exhaustive research, engineering thoroughness, and careful pre-testing assure General Electric's customers of optimum performance and minimum maintenance for every type of G-E equipment. General Electric can assist you now with your modernization and expansion plans and with your everyday electrical equipment needs. For more information about the G-E equipment to help you in your industry, write: *International General Electric Company, Dept. 70-11, 150 East 42nd St., New York 17, New York, U.S.A.*

GENERAL ELECTRIC

-U.S.A.-

G-E Spectrophotometer measures, analyzes, and controls colors for almost any industrial or laboratory application. Used frequently in the textile industry, it soon pays for itself through increased efficiency and elimination of trial and error methods.

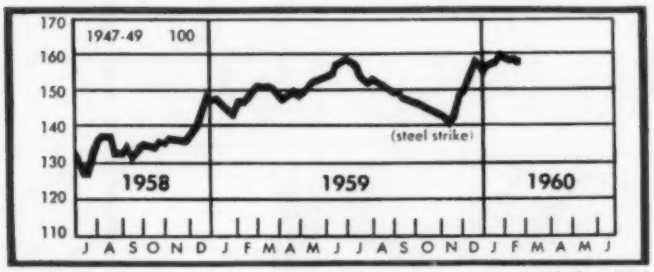


The modern 42,400 DWT Trinity Navigator was the world's first ship to be equipped with International General Electric's co-ordinated Engine Room Package. Since its introduction, the Engine Room Package has been ordered for installation in ships totaling over 1,000,000 tons.

This modernized Hershey sugar mill in Cuba is equipped with dependable General Electric equipment, including the packaged outdoor structure shown above. The plant's integrated G-E electrical system has helped lower operating costs.

INTERNATIONAL
MANAGEMENT'S

Business at a Glance



Business Week

U.S. Business Trend

The exuberance that marked early 1960 forecasts has waned. The index shows an easing in February, owing to less-than-expected inventory building (both steel and autos lowered their February-March production goals), price stability, seasonal factors. Many think the slower pace a good thing—"stretching out" the steel strike recovery over the year rather than cramming it into a few months.

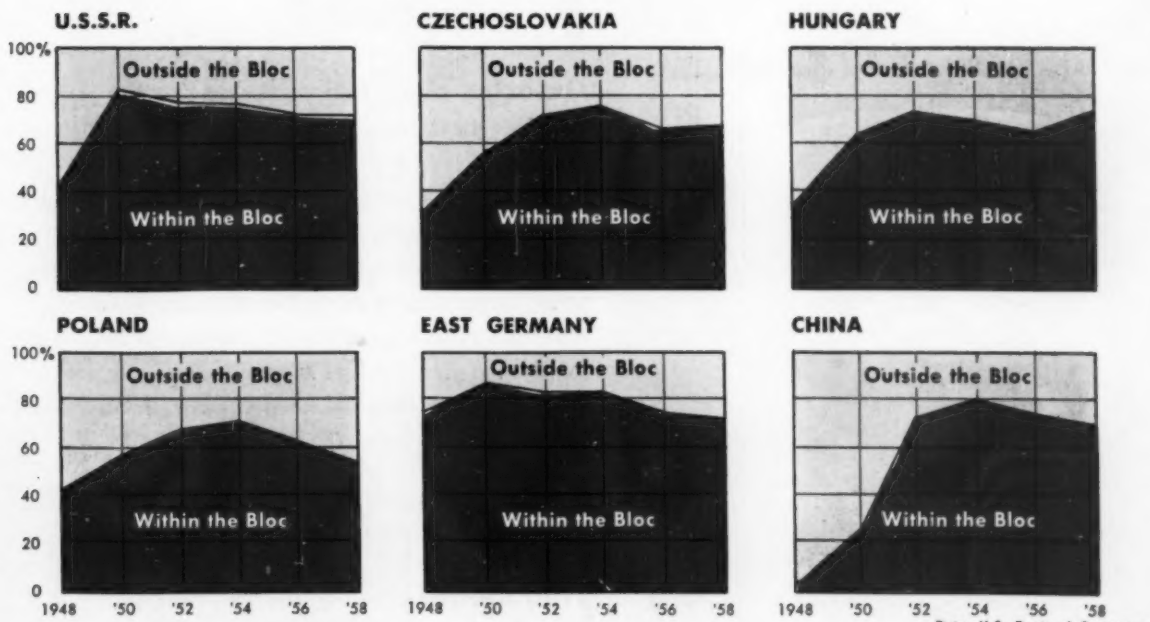
• CHARTS OF THE MONTH

Data: U.S. Dept. of Commerce

Trade Among the Communists

The Sino-Soviet bloc's trade with the non-Communist world has been rising, and will rise further—thanks partly to the past few months' trade promotion efforts of Messrs. Khrushchev and Mikoyan, in Asia and Latin America especially. Note also that the U.S.A. seems to be expanding its Communist trade: $30.5-million worth of U.S. goods were licensed for shipment in 1959's last quarter, the highest level in eight years.

One result of this trend is a return to more non-Communist commerce by East Europe. The Poles' and Czechs' intra-bloc business has fallen from a 1953 high of 70% and 78% respectively to 56% and 67%. Yet Communist autarkic tendencies persist, and intra-bloc trade has held at over 70% of the total since 1950.



Data: U.S. Dept. of Commerce

Monsanto *Basic Source of Wood Treating Chemicals*

COURTESY RAYONIER INC.

Creative chemistry is the road to market. It's a railroad bridge that spans obstacles on the way . . . the cross-ties that bind rails in tracks. Creative chemistry is wood that is almost timeproof because it's treated with Penta to resist termites and decay. Treated wood lasts three to five times longer than untreated wood under the most difficult service conditions . . . cuts replacement costs in all wood construction. Monsanto is a basic source of this amazing chemical for the preservation of wood in all types of construction.

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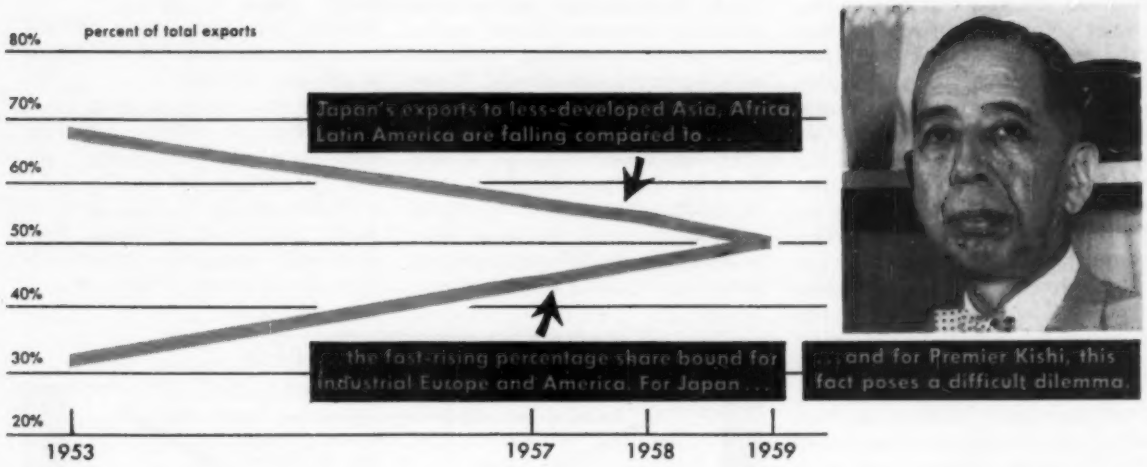
Dependable service from Monsanto companies in London, Paris, Tokyo, Melbourne, Montreal, Bombay, Mexico, D.F., Buenos Aires and from sales representatives in all principal cities of the world.

Where Creative Chemistry Works Wonders for You


80%
percent of total exports
70%
Japan's exports to less-developed Asia, Africa, Latin America are falling compared to . . .
60%
50%
40%
30%
. . . the fast-rising percentage share bound for industrial Europe and America. For Japan . . .
. . . and for Premier Kishi, this fact poses a difficult dilemma.
20%
1953
1957
1958
1959

What Role for the Japanese?

IN TOKYO last month, statisticians were busily compiling the results of Japan's record 1959 foreign trade. One fact was clear in early unofficial counts: Japan's exports continue to find more ready, profitable markets in industrial nations than in less-developed areas (chart above).

Most Japanese economists are prepared to say that this is a long-term trend. Indeed, Japan's experience does no more than confirm what United Nations research has proved—that industrialized nations' trade with each other is rising faster than their trade with underdeveloped nations, or the underdeveloped nations' trade with each other (IMD—Jan. p11).

• **Dilemma** — Because Japan's corner of the world is remote from the industrial centers of North America and Europe, because it is an Asian nation—the only one with an industrial economy—the point becomes confused even to the Japanese themselves. Their business ties, their economic survival, are now dependent on Western nations. But their social, historical, and cultural ties bind them to Asia.

The dilemma becomes cruelly complex in Japan's relations with Communist China. Chinese trade is mortgaged to the Soviet bloc in exchange for "aid" (see page 11); there is little basis for normal exchange with Japan. Nor are the Japanese, in the present political atmosphere, prepared to make the kind of long-term credits that might entice the Chinese.

Yet many of the small businessmen of Japan, who once lived off the Mainland trade, dream of the old days returning. And Japanese intellectuals, to whom Chinese history and literature is as familiar as their own, fear the prospect of being indefinitely cut off. It is a subtle fear which Peking's rulers continue to play on skillfully.

• **Skill**—Yet Japanese leaders have played their hand well. When Nobusuke Kishi became prime minister in 1957 (largely because his faction-ridden Liberal Democratic party did not believe he could hold on to the job), he rushed to the U.S.A. and succeeded in settling a number of important issues with the Americans. His position was established.

Then, last January, Kishi journeyed again to Washington to sign a security pact which confirms Japan's position as a full, respected member of the Western group of nations, and the U.S.A.'s most important Far East ally.

Despite some of the painful implications of the U. S. treaty, Kishi has led most Japanese to face the reality of their industrial, Western ties. Indeed, many of them are too busy enjoying prosperity to worry much about political debates on the treaty issue.

• **Jazz, too**—Never have so many Japanese had it so good. Japan has turned in a performance at least equal to West Germany's "economic miracle" (page 14); living standards are well above prewar, with the possible exception of housing. Prosperity has given Japanese a taste for comforts they have never been able to afford.

Millions of homes now have electric and gas heaters instead of charcoal "hibachis." After five record harvests, many a farm based on new agricultural technology has a television set and a mechanical cultivator for the paddy.

If Americans are often the target for leftist propaganda or sly remarks by conservatives, they are also imitated—from "jazz coffee shops" and teen-age dress to the electronics companies who try to solve their skilled labor shortage by promising to send new graduates and engineers to America for training.

• **Chinese Puzzle**—The neutralism that had such a vogue in the

early postwar period is waning. Confirmation of how sickly it is came recently when the pacifist, anti-imperialist, neutralist Socialist party split, with the right wing adopting what it feels are more realistic policies: that less emphasis be put on government ownership, that exports must be raised to $10,000-million by 1968 (with 80% probably going to the West), that a "Two Chinas" policy is essential. The latter point is a significant bow to reality; the Nationalist Chinese (who abhor the "two-China" concept) are an important Japanese customer.

Kishi has maintained since Communist China's boycott of Japan trade in 1958 (actually a Peking attempt to unseat his government) that the only policy for Japan is "wait and see." Nothing has happened yet. The Chinese refusal to make even the slightest gesture to Japan puzzles many observers, who believe that a "soft" approach by the Communists would influence so many people that a Conservative Japanese government would have no choice but to extend some recognition to Peking. Instead, the Chinese have gone out of their way to humiliate conservative Japan.

• **Japan's Place:** Coming to terms with Peking will continue to be Japan's top foreign problem. But there are a welter of others.

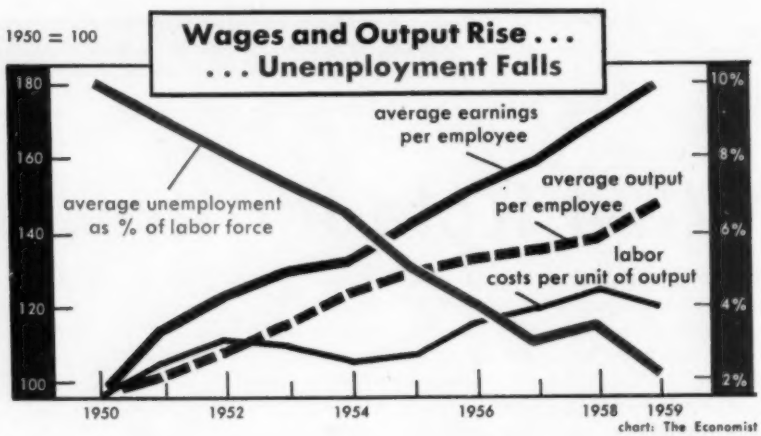
The talented, productive Japanese will for a long time be the problem producer of the industrial community. Of 1959 exports (perhaps $3,300-million), nearly one half went to North America and Europe, while sales to other areas grew slowly or stagnated (exports to South Asia have dropped from 48% of the total to 29.5% now). Looking ahead, Japanese see problems in Europe—they consider the regional trading arrangements there as barriers to their goods, not as opportunities for larger markets. Britain, Japan's traditional European ally, still invokes GATT article 35 to limit Japanese imports into the United Kingdom and East Africa. Meanwhile, Japanese trade promotion efforts in Latin America (IMD—May'59,p11) have not been very successful.

It has been the U. S. market that has permitted Japan's huge trade gains in the past two years. And around the world, businessmen wonder if the U.S.A. will continue to absorb upwards of $1,000-million in Japanese goods each year.

To hold on to the U. S. market, Japan is now emphasizing more varied, stylish, and complex goods. As for textiles, they are trying to abide by voluntary export quotas. In hopes of forestalling anti-Japanese protectionism abroad, Tokyo is moving, though slowly, to liberalize its own import policies.

• **Cooperation**—For the future, Japanese see hope for their trade in international efforts to assist developing countries. Japan is eager to work with the Atlantic industrial nations now talking about joint economic programs in Asia and Africa. West German Chancellor Adenauer was scheduled to visit Japan late last month, and as INTERNATIONAL MANAGEMENT went to press, it was known that the Germans want to invite Japan to cooperate. The French, increasing their political and cultural activities in Japan, might also approve.

Other ideas keep popping up as Tokyo trys to secure a niche for itself—a scheme for a Pacific "common market" linked to the U. S.; a Japan-sponsored Asia development fund; a U. S.-Japan Joint Economic Commission patterned on U. S.-Canadian cooperation. ●



German Labor Squeeze is On

FOR A DECADE, the world has watched with awe Germany's unfolding *Wirtschaftswunder*, an "economic miracle" which doubled output, sent highly-competitive goods flooding into world markets, and heaped gold and dollars in the nation's coffers. Through it all German prices rose by a bare 1% yearly, while competitor countries struggled with inflation and muttered under their breath that some day even the Germans must face a few unpleasant facts of modern economic life.

• **Time?**—That day may be at hand. An American economic study recently pointed to several developments that make it difficult for Germany to preserve its cherished price stability: the possibility of budget deficits; the quickening pace of private consumption (accompanied by an explosive expansion of consumer credit); the prospect of much lower returns on new capital investment from now on; and, finally, the pressure for wage rises beyond productivity advances.

In February, *The Economist* of London emphasized over-full employment as the crucial factor (chart above). Unemployment is now at 1% or less of a labor force that will grow in 1960 by no more than 1%. This "drastic tightening," says the British journal, "removes one of the main former bases of growth in output."

• **Lost Touch?** — The evidence suggests a slowing-down of German growth, rising inflation pressures. But it would be foolish to write off the "economic miracle" just yet. One of its distinguishing features has been the ability of the Germans to reconcile fast growth with relative price stability, and there is no sign yet that they have lost their touch. ●

More U.S. Companies Buying Abroad

The shift is not drastic, but the trend is unmistakable. American manufacturers are beginning to talk openly about their plans to import more components and finished goods.

"WITH GREAT RELUCTANCE," the U.S.A.'s Baldwin-Lima-Hamilton Corp. is importing parts for its hydraulic equipment—so it can compete with foreign bidders on U. S. government contracts.

Burroughs Corp. for years has been shipping office calculators from its Scottish plant to the U.S.A.; now it is making ready to ship 19-key adding machines from a new plant in northwest France.

These are two incidents of a growing but little publicized trend in American business: the purchase or production overseas of finished goods and components for export back to the U. S.

• **Price Motive**—As an indication that the trend will grow, the American Management Association recently called its first conference on "Organizing the Company for World Wide Purchasing." At that meeting, one of the speakers bluntly told the audience: "We do not apologize for buying overseas. Price is important to us, and we get significant savings by buying overseas."

Holding up a small timing device, Herbert Pickering of Polaroid Corp. said: "We buy this component in Japan at a fraction of what it would cost us to make it. Otherwise, an important project would not have gotten off the ground." In his other hand, Pickering held a coiled metal cord: "We sent specifications for this component to U. S. and German companies. The first sample came back from Germany."

Polaroid buys overseas not only for price, but for quality, service, and to tap technical knowledge that is not available in the U.S.A. Looking to the future, Polaroid also buys to find out "who can do what."

• **Implications** — Actually, the dollar value of these overseas purchases of components is not large. Polaroid spends only 3% of its purchasing dollar overseas. And of total U. S. imports of $15,000-million last year, only perhaps $500-million was imported by manufacturers.

But the trend is gaining momentum at a time when the U. S. balance of payments is under pressure, and economists are worried about new drains on the dollar. There are other implications, too.

The businessmen at the AMA conference heard a labor union leader warn against the displacement of skilled labor. A business economist pointed out that a drastic shift to buying abroad could starve the product and market development done by U. S. suppliers. The extra value of technical services, research, and consumer advertising, he said, is not always considered when price comparisons are made with overseas suppliers.

• **Reluctance** — As a matter of fact, most manufacturers, outside such hard-pressed industries as watches and bicycles, do seem reluctant to accelerate the trend. But a growing number are determined to get the best value for their money. As an indication of current thinking, a group of purchasing agents in the chemical industry recently played a business game involving "Product X," actually a composite of several key chemicals now being imported. After considering all factors, the purchasing agents decided a domestic producer could justify a price premium ranging from 10% to 20%, based on the superiority of his product and services. But at a 15% price difference, a majority said they would go overseas for up to half their requirements for Product X—and a few would go as high as 80%.

• **World View**—Some of the big multi-product companies are now taking a "one world view": They see the day when manufacturing will be done wherever the cost factors are most favorable. American Machine & Foundry Co., for instance, foresees a continuous cycle of old products moving into its overseas plants, being replaced—it hopes—by new products at home. Already, AMF supplies the U. S. market for "old-style" bread-slicing machines from a Latin American plant, makes only the high-speed model in the U.S.A. Before many years, AMF expects to supply the U. S. tobacco industry—once its "private province"—with European-made equipment, with the whole world serviced from centers in Switzerland and Australia.

Currently, AMF is tooling up overseas to manufacture its highly successful automatic pin-setting equipment for bowling alleys—and another cycle is underway. As its next big U. S.-made product, AMF is counting on developing equipment for desalting sea water.

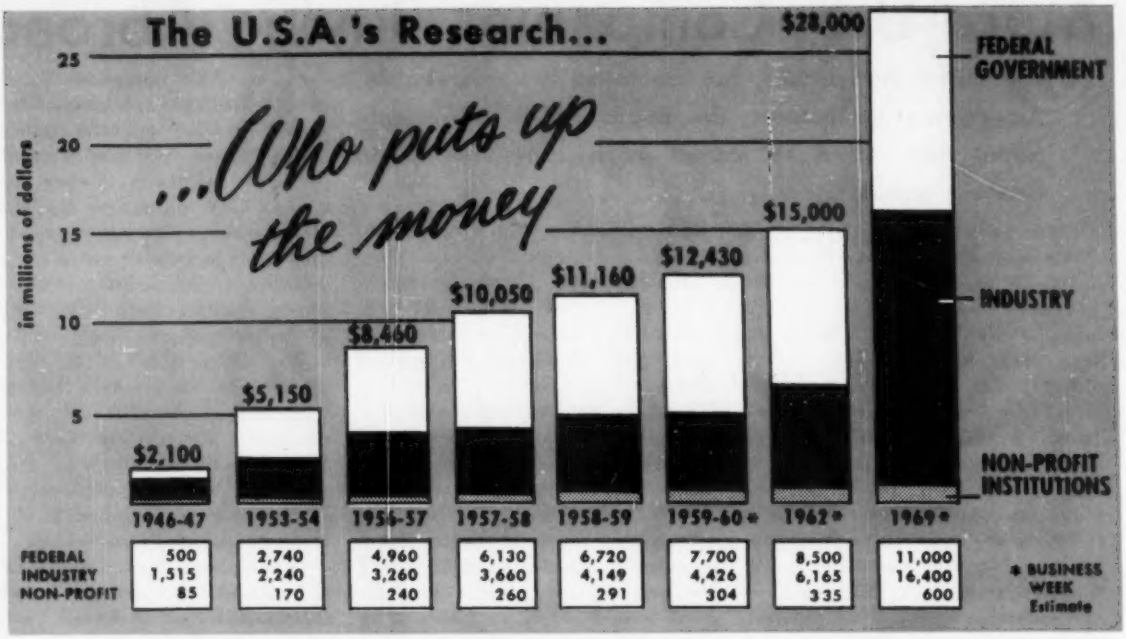
• **Problems**—Buying overseas is not without its problems, of course, especially for small firms. Technical problems are minor, but troublesome — differences in blueprint markings, engineering procedures, inspection standards.

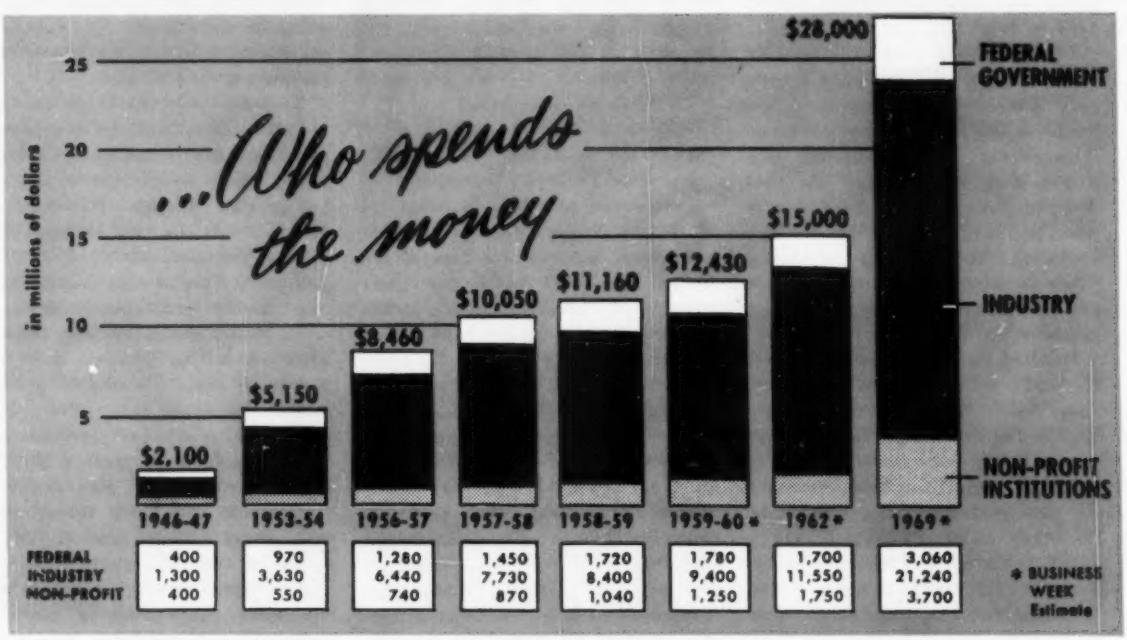
Customs red-tape is much more serious. Classifications are complicated, and a 10% difference in tariff rates can be decisive in whether to buy abroad or not. Worst of all, customs officials can change their rulings retroactively.

Buying abroad also creates serious logistics problems. A medium-sized bicycle manufacturer, Arnold, Schwinn & Co., Chicago, now has purchase contracts with 26 companies in eight countries. Last year, the company received 343 shipments from overseas, a total of 34,000 crates. And its inventory of overseas purchases turned over only three times, against six to seven for domestic purchases.

But extra warehouse space was the least of Schwinn's worries. Shipments arrive from Europe in three weeks via the St. Lawrence Seaway, but then it takes Schwinn four to six weeks to get them unloaded and through customs.

The bicycle industry is an exception to the rule that mass-produced, standardized products are cheaper in the U. S. In other industries, most of the products purchased overseas have a high labor content. And no one expects the "labor cost gap" to change overnight. That is why the trend to overseas buying will continue. ●





Data: 1947, Defense Dept.; 1953-1960, National Science Foundation; 1962-1969, BW Estimates

Yankee Business Bets on Research

THE IDEA that innovations are the real seeds of long-term economic growth is taking root in the U. S. A. (see page 9). And the charts above provide a dramatic picture of the investment Americans are putting into the search for innovations. Indeed, organized research and development—"R & D"—now is called by many the "fastest growing industry in the United States."

Statistics recently released by the National Science Foundation show the scope of the research boom. Since 1953-54, R & D spending has soared from $5,150-million to an estimated $12,430-million for 1960. *Business Week* magazine believes it could grow to about $15,000-million in 1962, and to a staggering $28,000-million by 1969.

The U. S.—and world—markets have only begun to see the effects of this spending. It takes an average of seven years for new products, new processes to move from laboratory to commercial use. The research effort of the mid-1950s is now beginning to pay: One study indicates that new products moving

to market this year will account for roughly 15% of all the sales in the chemical, electrical, machinery, and transport equipment industries.

The "multiplier effect" of today's massive spending practically guarantees that, by the mid-1960s, American laboratories will pour forth an unprecedented stream of innovations. Many of these new American products of the 1960s will have an international heritage. Increasingly, U. S. businessmen are using their own overseas plants and partners, as well as hiring foreign researchers, to carry forward their R & D programs.

• **Who Pays?**—Government funds have supported a large share of research in the past. In the U. S. it has shouldered 60% of the total effort (top chart, preceding page). But industry has done most of the actual work (bottom chart).

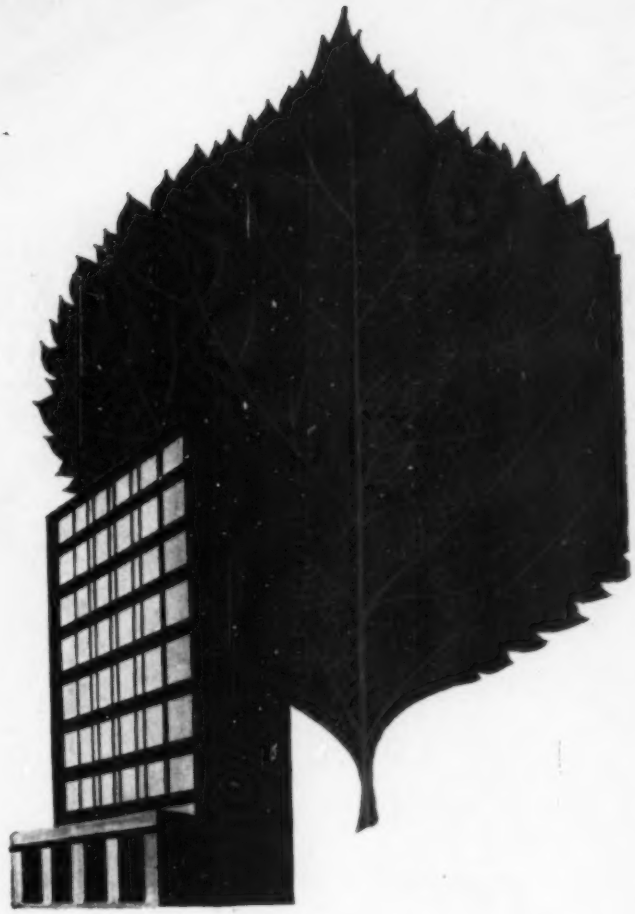
This makes sense because military and public-welfare needs demand huge outlays of money. But industry's laboratories have been in the best position to do most of the research and engineering.

• **New Outlook**—Experts believe that this picture is changing, and that by 1969 industry itself will supply most of the research funds. The reason: American businessmen have found that research pays off.

Industry's attitude toward research has changed radically since the early days after World War II, when investment for these purposes seemed to be a needless extravagance. Such industries as petrochemicals, pharmaceuticals, and electronics are moving into periods of violent growth. Companies can continue to gain ground—and stay ahead of competitive products and systems—only by intensified basic and applied research.

Business Week predicts that by 1969 American industry will be paying for about 60% of the overall research effort—with an outlay of $16,400-million. This estimate assumes that economic growth will continue at a slightly increased pace, and that corporate executives will retain their faith in heavy investment in research.

• **Basic Research**—Industry also is backing more basic research at universities and other non-profit institutions. Today it pays for about 25% of this effort. By 1969, it may be shouldering 40% or more. ●



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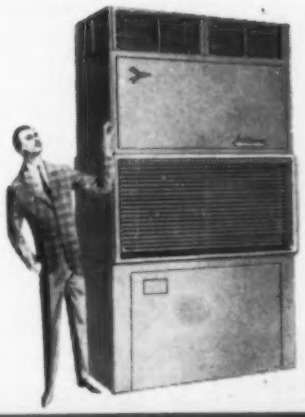

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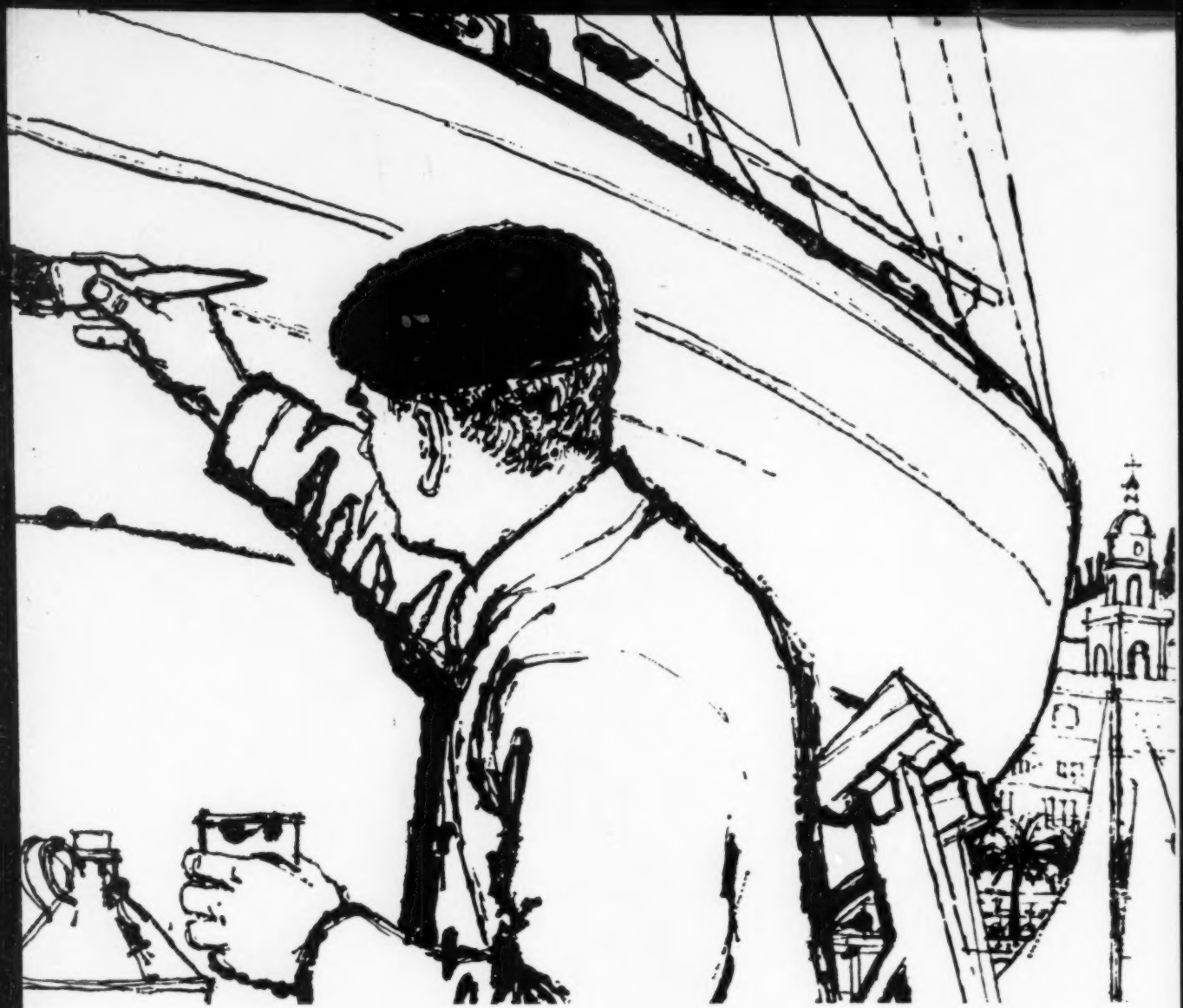

Protective Measures

Those who go down to the sea in ships (and those who don't) know the value of surface coatings based on Epikote resins. These Shell-made epoxy resins—basis of the amine-cured, ester and resin modified systems used in today's best protective paints—keep corrosion at bay.

Food and drink containers (from a can of soup to giant mixing tanks), pipelines, swimming pools, tanker holds and other surfaces subject to chemical corrosion can all be safely, and profitably, lined with Epikote resin-based coatings — coatings that can be brushed, roller-coated, flow-coated, sprayed or dipped on to virtually any prepared surface.

Epikote liquid and solid resins are extremely flexible in formulation and form coatings that are among the most chemically resistant organic finishes known—withstanding, for example, the action of acids, lacquer solvents, hot concentrated sodium hydroxide and concentrated liquid detergents. For anything epoxy resins can do, for *everything* chemicals can do, call on Shell to help you.

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integrated data processing:
widespread business activity under continuous control

In most large companies, the collection and analysis of data generated by widespread departments are essential for management to properly direct activities. Unfortunately, by the time all information is prepared and ready for decisive action, it may be out of date.

The concept of integrated data processing may provide the solution. "Integrated" describes a data processing network encompassing all departments and functions that contribute or use operating data. Thus the reports reflect the situation in all areas of company activity, and executives can make informed, timely decisions. Result? Greatly increased operating efficiency.

Many businesses are now close to the goal of a completely integrated data processing system. At IBM offices in principal cities of the world, you will find men experienced in the concepts of integrated data processing—men who can apply the most advanced IBM data processing systems to the needs of your business.

IBM WORLD TRADE CORPORATION **IBM**

Adhesives Show New Vigor

TWO YEARS AGO, an American company won world publicity for itself by raising a full-sized automobile on the strength of a single drop of a synthetic adhesive (IMD—Jan '58, p62). Today, auto-lifting is still done by conventional means. But the synthetic adhesives have launched a broad invasion of every phase of manufacturing.

Screws, nails, welds, brazing, rivets, strapping, brackets—synthetic adhesives can replace any of these. What is more, the adhesives can sometimes do the job faster, better, and cheaper.

The manufacturer now has a wide range of adhesives for bonding metal to metal, wood to wood, plastics to plastics, and each of these to each other. He can select an adhesive to satisfy his particular needs in strength, durability, chemical resistance—and cost. A few of them are listed below, along with typical applications.

• **Two Classes**—Though there are many adhesives, they fall basically into two classes: thermosets and thermoplastics. The thermosets include epoxies, phenolics, and furans. They bond by an irreversible chemical change and offer high strength and rigidity plus resistance to heat and solvents.

For less severe service (and lower cost), the choice may be one of the thermoplastics—vinyl, rubber, reclaimed rubber. These are especially useful for bonding porous materials and plastics. Unlike thermosets, they do not chemically change when heated, and they soften at specific temperatures.

Various blends also are available that provide the strength of thermosets and the "give" of thermoplastics. Among them are elastomer-modified phenolics, vinyl-butryal phenolics, neoprene phenolics. These are extremely versatile: They bond metal to metal, and expand and contract slightly when stress is applied at a joint.

• **Far Better**—Today's adhesives are more than a substitute for conventional fasteners. They do jobs that were impossible before—such as sealing, bonding, and insulating in a single operation.

Products bonded by adhesives have a smooth, unscarred appearance. No rivets or screw heads protrude. There are no bulging seams, no welding blemishes.

• **Two Examples**—Until recent years production men put fiber insulation onto metal with steel strapping. Now they use rubber-based adhesives for a cheaper and more durable job. On railway tank cars, such bonds withstand the vibration of travel and keep their strength at sub-zero temperatures.

Another example is the bonding of carbide cutting tools to steel tool holders. Epoxy adhesives now are taking the place of clamping devices, set screws, and brazing for this troublesome job.

Books on the new adhesives: *Adhesive Bonding of Reinforced Plastics*, by H. A. Perry; *Epoxy Resins — Their Application and Technology;* McGraw-Hill Book Co. Inc., New York, 1959. (*Factory, Jan, p* 51)

Which glue for which job

JOB—Vinyl insulation on vehicles, machinery.
ADHESIVE—Oil-resistant synthetic rubber.
ADVANTAGES—Resists aromatic fuels, dries rapidly, relatively inert to the plasticizers used in vinyl.

JOB—Ceramic wall tile.
ADHESIVE—Waterproof rubber, specified "for wall tile".
ADVANTAGES—Easy application; strength increases with time.

JOB—Honeycomb panels, metal to ceramic or metal to dissimilar metal.
ADHESIVE—Two-part epoxy resins.
ADVANTAGES—High strength without curing; good resistance to acids, solvents, oils, fuels; retains strength at from —54 to 82 C.

JOB—Metal to metal, for aircraft wings, toys, containers.
ADHESIVE—One-part epoxy resin.
ADVANTAGES—When heat-cured (at 176 C), these adhesives offer both strength and flexibility.

JOB—Thin metal sheets to each other or supporting members, for fuel tanks or other containers.
ADHESIVE—Elastomer-modified phenolics.
ADVANTAGES—Versatile and with high dead-load strength; can be sprayed, brushed, or rolled on; also comes as film, coated paper or fabric. Must be cured under pressure.

JOB—Metal panels to supports or insulation.
ADHESIVE—Vinyl-butryal-phenolics.
ADVANTAGES—A proper blend combines the good adherence of vinyl, the rubberiness of butryal, and strength of phenolics. After curing, bonds have shear strength of from 150 to 350 kg/sq cm.

JOB—Plastics and rubber to metal.
ADHESIVE—Nitrile rubber.
ADVANTAGES—One of toughest, most versatile thermoplastic adhesives; excellent resistance to water, fuels, lubricants; good resistance to heat and cold.

JOB—Wood, paper, fabrics, rubber, ceramics to each other and to metals.
ADHESIVE—Reclaimed rubber.
ADVANTAGES—Low cost and sufficient for many bonding operations. Shear strength of 3.5 to 14 kg/ sq cm; excellent resistance to water, but poor resistance to fuels, solvents.

JOB—Rubber, metal, plastic, leather, wood, fabrics, glass, ceramics to themselves and to each other.
ADHESIVES—Nitrile phenolics.
ADVANTAGES—Good strength at high temperatures, good resistance to water, hydrocarbons, solvents; uncured has strength of 21 to 35 kg/sq cm; cured, strength of 70 to 280 kg/ sq cm.

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Blow Molding: Better Parts at a Fraction of the Cost

UNTIL RECENTLY blow molding was confined to making plastic "squeeze bottles". Now it is moving vigorously into markets formerly served by injection molding and thermoforming, and by metals, ceramics, and glass. Blow-molding machines are turning out large quantities of dolls, toys, housewares, automotive and industrial parts (pictures).

Two factors lie behind what *Modern Plastics* calls "the almost explosive force with which blow molding has taken its long overdue plunge into big business." They are (1) high-density polyethylene; and (2) the introduction of versatile stock machines for blow molding.

• **Better Materials** — High-density polyethylene has given the blow molder the rigidity and toughness he needed for many applications. More than half the new products use high-density PE, or a blend of high- and low-density material.

The price of the plastic has been coming down steadily. And molders find that they can use less of the material than its alternatives, because wall thicknesses can be cut down without greatly affecting performance.

• **Better Machines**—Tool manufacturers have been constantly improving their line of commercial blow-molding units. At least 28 firms in Europe, the U.S., and Japan now are making machines. Many are fully automatic and capable of molding parts of any size or length—from a few centimeters to a meter.

Blow molding can produce practically any hollow object, irrespective of size or shape. The technique consists of forcing a heated tube of plastic (a parison) against a mold by air pressure. The material remains in a semi-solid state throughout the process.

In contrast, injection molding drives a charge of melted plastic into the molding cavity. Thermoforming softens a sheet of plastic and presses it against a mold.

• **Economies**—Blow molding not only does difficult jobs but it does them cheaper. Where other techniques require a number of steps, many products can be blow-molded in a single operation.

For example: To make a pitcher by injection molding, two halves must be molded and cemented together. Blow molding turns out one-piece pitchers with either solid or hollow handles.

Molds also cost far less. Cavity for cavity, a blow mold is said to cost from one-eighth to one-third as much as an injection mold. The blow mold does not have to be of complex design nor made of expensive tool steel: aluminum, beryllium-copper, or ordinary carbon steel will usually do.

Blow molding is ideal for producing deep, hollow parts such as carboys and waste baskets which would thin out too much at the bottom when thermoformed. Two such parts can be made as a single unit, then sliced apart to make two finished products.

• **Versatile** — Molders find the blow-molding technique versatile as well as economic. Here are some of the special things that can be done with it:

—Products can be blown with inserts in them.

—Parts with varying wall thicknesses can be blown.

—Molds can be designed so that the parison is squeezed together in some areas and not in others—leaving a product that is part hollow and part solid.

Molders have begun to use other thermoplastics besides low- and high-density PE and blends of the two. German companies are blowing containers out of styrene, gloves and tool grabs out of vinyl. Acetates and cellulosics also are being used.

• **More Plastics** — Not only has blow molding replaced other techniques, but it also has been expanding the use of plastics generally.

Blow-molded plastics, for example, now are taking the place of glass and metal as components in automobile accessories. They go into such industrial products as insecticide tanks, large carboys, paint brush handles, oil pumps, and fuel tanks for small motors. Blow-molded housewares include such complex items as carafes, juice de-

BLOWN ITEMS include insecticide tank (top), jars, pails, grip handles, boat bumpers, and liquor dispensers.

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canters, bed urinals, handled jugs, double-wall thermos bottles, soap and whisky dispensers.

Many doll bodies and legs now are blow molded, and the process soon will be used for doll heads. The success with toy wheels may point the way toward blowing wheels for baby carriages, golf carts, lawn mowers, and other rolling items.

Designers are constantly finding new consumer and industrial applications. A Japanese molder is reported to be blowing shells for trophy bases and statuary, then injecting plaster into the shell. One authority suggests that a refrigerator door might be made in the same way—blow molded and then filled with plastic foam for insulation and strength. (*Modern Plastics, Nov, p*83, *Dec, p*96)

Food Grown in a Factory

Taiwan's yeast can be eaten at the table—or fed to hogs for improved pork.

SUGAR FACTORIES of Taiwan (Nationalist China) may have found an answer to one of the world's most critical food problems—the production of low-cost, high-value protein. At the Hsin Ying factory of Taiwan Sugar Corp., blackstrap molasses today is being turned into torula yeast at the rate of 40 tons per day.

• **Food & Feed**—The output of Hsin Ying is used for both human food and livestock feed, and substantial quantities are being shipped to other countries. Most of production now goes into feed, but human applications—in the form of sugar-coated tablets, fortified flours, and additives for soups and stews—are growing steadily.

Taiwan Sugar began working on a yeast plant five years ago, borrowing technical knowledge from the U. S. A. and from Germany, where yeast was grown and dried in large quantities during World War II. The initial Hsin Ying plant went into operation in 1957, but it was modified and improved last year.

The process consists of diluting molasses and then feeding it continuously with other nutrients—urea, superphosphate, ammonium sulfate, air, and water—into yeast propagators. The resultant yeast wort is concentrated in centrifugals, then dried, screened, and blended in special equipment.

The yeast cell is a self-sufficient living organism that produces enzymes, vitamins, and growth factors. Taiwan's food yeast contains 45% protein, 9% fat, plus controlled quantities of thiamin, riboflavin, and niacin.

The production of yeast has three major advantages over other protein-rich foods:

Speed. Land crops take months from seedling to harvest, but yeast doubles its body weight in three to four hours.

Space. Factory-grown yeast can produce a thousand times more food per unit of land (or floor) space than any cultivated crop.

Efficiency. Nearly 90% of the inorganic nitrogen fed to yeast is converted into edible protein; on the other hand, much of the fertilizer applied to soil is lost to weeds and water runoff.

The Hsin Ying yeast factory has an assured source of raw materials and an assured market. The Taiwan Sugar Corp., a government enterprise, produces huge quantities of molasses as a by-product of sugar making. It also raises 40,000 hogs a year. It needed a cheap and nutritious hog feed to expand its meat-selling operations at home and in nearby countries.

Hsin Ying makes food yeast in several forms. About a ton of sugar-coated, vari-colored tablets are produced daily. Dried yeast powder is blended with flour to make "Nutritive Wheat Flour," and a yeast autolysate is produced that gives a meat-like flavor to soups, stews, and gravies.

• **New Product**—Taiwan technologists recently have developed a new product—yeast-soybean granules—said to be the first special ingredient for making soy sauce. The granules enrich the sauce, and cut down on manufacturing cost. Southeast Asia consumes large quantities of soy sauce (an estimated liter a week per family) and Hsin Ying hopes to fortify much of it with yeast. (*Food Engineering, Feb, p*92)

In engine conversion

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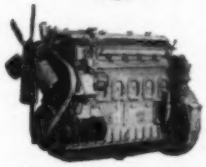

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Spare Auto Parts Twisted to Order

A NEW TREND in manufacturing and distribution is on the way. Instead of receiving spare parts, a distributor soon may get stock sizes of tubing and metal sheets—plus a "library" of punched tape that will turn the stock into finished parts.

The first item to be handled in this way will be automobile tailpipes. Such exhaust piping is required in a number of different sizes and configurations. A distributor normally has to clutter up his warehouse with hundreds of these to satisfy motorists' needs.

• **In Two Minutes**—Two U.S. companies hope to change all of this. Nu-Era Corp. soon will market an automatic, tape-controlled machine—called "Bend-O-Matic"—that will bend and cut straight pipe into tailpipe of any specification in about two minutes. A distributor will need to carry tubing in only four basic diameters plus the library of punched tapes, each of which carries the specifications of a different model tailpipe.

Only three factors must be put on tape for each tailpipe: length between bends, polar rotation, angle of the bend. A "reader" absorbs this information and activates the machine's controls.

Nu-Era plans to buy the machines from their manufacturer, Baldwin-Lima-Hamilton Corp., and lease them to about 100 auto-parts distributors at $25,000 a year. The lessee will receive 700 to 800 tapes, one for each tailpipe he needs to keep in stock. B-L-H will do the tape programming and store the master tape at its plant.

A prototype Bend-O-Matic has been built, and Nu-Era plans to install this machine at its own plant. It will be used to manufacture prebent tailpipes for parts suppliers who are too small to lease a Bend-O-Matic of their own.

• **Two Pipes for One**—Nu-Era estimates that the Bend-O-Matic will halve the inventory space needed by U.S. parts warehousers. And instead of paying about $2.10 for a pre-bent tailpipe, a distributor can get a 5-meter length of straight tubing that will make two pipes for only $1.75. (*Business Week, Jan* 16, *p*58)

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offers an original,
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combined with numerous practical features
that make it an outstanding quality product.
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Technology in Brief

Machine Serves Up Giant Pipe

A U.S. pipe factory has installed equipment that automatically feeds lengths of giant steel pipe to any of five welding stations. An operator merely presses a button to advance a pipe from a conveyor or a waiting station. Proximity switches manipulate the pipe into position. When a weld is completed, the operator presses another button to route pipe to inspection. (American Machinist/Metalworking Manufacturing, Feb 8, p4)

Radiation Aid for Europe's Food?

The European Nuclear Energy Agency plans to use mobile radiation sources to help Europe's farmers extend the shelf-life of produce and control food-borne diseases. ENEA's plan is to equip two or three trucks with low-dose cobalt-60 behind heavy shielding and send them to various agricultural research centers in Europe. (Chemical Week, Jan 16, p61)

Epoxy Dies Prove Durable

Machine dies made of epoxy resins normally are used for only short runs. But U.S.A.'s Checker Motor Corp. has drawn as many as 18,000 parts with a single die of this kind, and it believes a much larger number of draws is possible. These dies are cheaper and quicker to produce than steel dies, and they can be readily altered or repaired. But they are not as strong as metal, and management must expect more downtime for repairs. (Factory, Feb, p146)

Coatings for Ultrahigh Temperatures

To meet the demands of atomic reactors and supersonic planes, U.S. scientists have been developing multi-layer coatings that can stand temperatures of 2200 C and higher. One laboratory is combining molybdenum and alumina, and reports a .7-mm composite coating that protects graphite and metals at 2500 C for short periods, and at 1900 C for periods as long as 40 minutes. (Product Engineering, Feb 8, p7)

New Process for Direct Reduction

A new process for the direct reduction of iron ore, invented by U.S. consultant Charlton Taylor, soon will be tested in a 2-ton/day prototype plant. Unlike direct-reduction plants now in use (IMD, Mar '58, p31), the Taylor process uses an oscillating furnace at relatively low pressures. The ore-charged furnace oscillates through 360 degrees while stationary fins assure intimate mixing of the ore and hydrogen. The complete reduction cycle is said to take only one hour, compared with the three to six hours of other direct-reduction methods. (Chemical Engineering, Feb 22, p53)

In One Sentence . . .

France is producing small, high-powered magnets for clocks and instruments out of platinum-cobalt alloys . . . The U.S. Post Office soon will buy $40-million of electronic equipment for test-transmitting of mail by facsimile . . . U.S.A.'s John B. Stetson Co. is studying the feasibility of producing disposable clothing for industrial and institutional use . . . Britain's United Steel Companies Ltd. is introducing new heat-resistant stainless steels in which cobalt takes the place of nickel.

HITACHI UNLOADERS TO HELP RATIONALIZE MILL OPERATION

SPHINX OF GIZA could fit under the 24-meter high girder of this Hitachi ore unloader at Yawata Iron and Steel. Both units are mobile and have raisable aprons. Operation is highly automatic.

The largest ore unloading facility outside the U.S.A. will further the rationalized operation of Yawata Iron and Steel's new mill at Tobata, Japan.

The installation is two Hitachi slewing man trolley type unloaders, each with a rated capacity of 1,000 tons per hour. Both are already in operation, ten months after the order was placed.

The unloaders have the capability of emptying a 48,000 d.w.t. ore carrier in 24 hours. The 30-ton grab buckets, operating at 75 cycles per hour, unload the ore into conveyers which carry it directly to the storage yard.

Turn-around time for ore carriers calling at Tobata becomes one of the shortest in the world, with resulting economy to the steel company.

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The Partners . . .

. . . How They Succeeded

Their profession came first, but learning to manage was essential for their growing business.

MISSILE-LAUNCHING STATIONS, sewage systems, a rapid transit system for sprawling Los Angeles, factory and office buildings. These are some of the latest world-wide projects of Daniel, Mann, Johnson & Mendenhall, an engineering firm with offices in Washington, Los Angeles (design headquarters), and London.

Back of this success is the story of a partnership. First there were three architects in a small California town, with one secretary between them. That was 14 years ago. Now there are four architects and one engineer—plus 500 employees scattered around the world.

Last month, the partnership reached full maturity. The firm was incorporated, with the partners becoming stockholder-directors. Now one is president, the others executive vice presidents. But the change is only a formality. The corporate structure reflects the interests and responsibilities that were hammered out in partnership.

The partners admit that the process of learning to work together was painful. There were misunderstandings, crises. And there was a reluctance to accept management responsibility.

• **Fast Expansion**—Santa Maria, California, was in the fastest-growing area of a fast-growing state. The area needed new schools, new office buildings, new everything. Business flowed into the firm of Daniel, Mann & Johnson.

The firm expanded to Los Angeles; and soon the "branch" became a thriving headquarters. But with success came problems that the three young architects were not trained to handle: Philip Daniel, a fun-loving extrovert; Kenneth Johnson, a born speech-maker; the serious-minded Arthur Mann.

Expansion was fast, but disorderly; and profits lagged behind the volume of business. Personal differences broke out; two of the men developed ulcers. As one partner recalls: "We knew the business needed managing, but each of us thought the other should do it."

Finally, they turned to a management consulting firm for help in the formidable task of organizing their expanding enterprise. And thus began a series of changes that turned the architects into businessmen.

One of the first decisions was to bring engineering work into the firm rather than subcontract it out. This brought Irving Mendenhall into the firm as the first engineer partner. Then Stanley Moe was made a partner after he successfully carried out a series of overseas assignments for the firm, which in the early 1950s was winning major design contracts for U. S. defense projects around the world.

• **Crucial Changes**—Perhaps the crucial change was to do away with the partnership principle that agreement should be unanimous. It was decided that decisions would carry by majority vote. In addition, the monthly planning sessions were turned into formal meetings, with the agenda prepared in advance. Thus the volatile architects, close friends as well as sometimes squabbling partners, agreed to orderly procedure. Arthur Mann, the best mediator among the partners, took over chairmanship of the partnership meetings.

The key to the plan was to break the firm into departments, with each partner in charge of an area that suited him. This led to a division of labor that has been satisfying as well as effective. The new corporate organization follows this pattern.

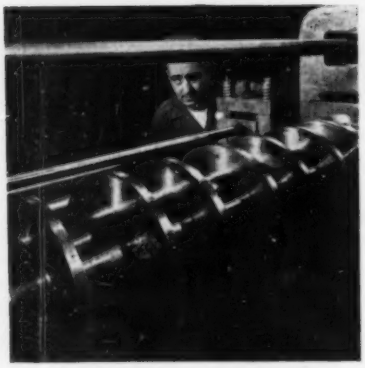
The president, surprisingly, is Mendenhall, the young engineer, who developed into a capable financial planner. He is also in charge of relations with other firms in joint projects.

Philip Daniel, the extrovert, is in charge of commercial design—and making new business contacts. Arthur Mann is in charge of institutional design. Kenneth Johnson, a stickler for detail, is in charge of industrial and military design.

Stanley Moe, the internationalist, is in charge of day-to-day details on overseas and domestic projects.

• **Code**—As another result of the early disagreements, the partners agreed to a code of ethics. There are 11 points that get to the heart of the partnership problem. Among other things, each partner agrees to build up and extend the influence of the other members, never to disparage the other members, and to either sell his ideas to the others or to accede to their judgment.

The new corporate directors intend to keep another unusual innovation. Each year, they will meet for three-day sessions which they devote not only to a review of the business, but to a sort of confessional. All problems concerned with management—professional and personal—are brought into the open and analyzed. (*Engineering News Record, Feb* 11, *p*53)



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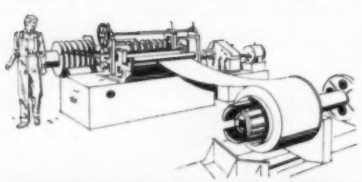


ENGINEERING YODER MANUFACTURING ROTARY SLITTING LINES

Who Controls the Corporation?

Corporation managements are practically divorced from ownership control. But they are now threatened by the powerful investment funds.

"AS OF TODAY, four or five pension or mutual fund managers, if they get together, are quite able to ignore the 'management slates' for directors, get up slates of their own, and vote in their candidates."

So far, says the author of this startling statement, these fund managers, who control vast portfolios of industrial securities, have not exercised their power; but sooner or later they will be forced to do so by management's own unchallenged position of power.

This is the considered opinion of Adolf A. Berle, Jr., an influential American specialist in corporation law. He argues his case in a provocative book called *Power Without Property* (Harcourt, Brace; 1959).

• **World Problem** — Individual stockholders are now so many, so scattered, and their holdings are so minute, that they are without any real voice in corporation affairs. Managers and boards of directors are almost completely divorced from ownership control.

Thus corporation managements have a degree of power—and the new fund managers unexercised power—that the business world has not yet fully recognized.

It is a world problem. The big corporations are international in scope, their shares are listed on the stock markets in many countries. The mutual fund idea is spreading around the world; the "cult of equities" is diffusing ownership. And companies everywhere are growing bigger.

Fund and trust managers are powerful because they limit their holdings almost exclusively to shares of the big corporations, and the big corporations have enormous resources. The top 500 corporations account for 65% of total U. S. industrial capital. The 200 biggest companies in the U.S.A. account for 50% of the nation's manufacturing capacity.

By not voting their securities, Berle says, the fund managers are simply reinforcing the absolute power of management, insulating it from "any possible action by or influence of the ultimate, beneficial owners of the stock."

Last month Berle's analysis was carried further, in the *Harvard Business Review*, by Ernest Dale, professor of management at Cornell University and a director of several international corporations.

• **Dale's Argument**—Of the 200 biggest corporations in the U.S.A., Dale estimates that the "management revolution" is complete in perhaps a third. In the remaining two-thirds, ownership has not yet been completely diffused; "there is still a measure of control by the actual risk takers."

Dale's chief concern is the fading away of the great organizers of industry, the "corporate dinosaurs" who once owned enough stock to make their voices heard. He contends that corporations under the influence of "partial proprietors" have produced better results than companies controlled either by independent managements or by sole owners.

As classic examples, he cites General Motors Corp. and E. I. du Pont de Nemours. Far from being dictators, the "dinosaurs" behind the growth of these corporations provided a "shield against the dangers of ingrown management," and created an atmosphere of free discussion that Dale is convinced is the key to dynamic management.

These dinosaurs "enjoyed their role and they believed in it. Now they speak nostalgically of the opportunities they had, but feel that the world of today no longer provides room for them or others like them."

• **Filling the Void** — Who is to take the dinosaur's place? Not the small stockholder. Once management becomes self-perpetuating, Dale comments, the stockholders' "still, small voice . . . seldom penetrates its soundproof rooms."

Dale believes that management could voluntarily restrict its own

powers by strengthening the board of directors. "Inside" boards fall short of an adequate check; it is difficult for an operating manager to split his personality. As for the outside director: "Despite his valuable counsel and contributions," Dale says, he "is usually beholden to . . . the internal management that appointed him." And his only power is a threat to resign.

If management really wants an independent review, Dale asserts, outside directors should be appointed for a minimum of three years. But he doubts many managements desire to restrict their own power. Neither does he have any faith that "professionalism" will make management infallible.

• **Only Alternative?** — The only workable alternative, according to Dale, is for the mutual fund and trust managers to begin exercising their power. He admits they are "frightened by any comparisons with the dinosaurs." Their chief method now of expressing disapproval of management is to sell their stock in the company. Dale calls this a "counsel of despair."

A few of the trustees of ownership have begun to realize their "obligations," Dale says. Analysts for some funds now ask "sharp questions" of management; some estate managers have been forced to take sides in proxy fights. But these things do not happen often enough, in Dale's opinion.

Dale suggests that investors, both institutional and individual, should form stockholders' associations. These would then hire their own professional directors to serve on corporation boards. This would not be a perfect solution, Dale admits, but he believes it preferable to, say, government intervention.

Berle's conclusion differs from Dale's somewhat. He believes the fund managers will eventually exercise their power. But he sees them as just another uncontrolled power group replacing corporate management. Today's corporate managers, he warns, are in a "singularly rough spot. Some know it; some do not." And those that do know it have much to ponder.

Eventually, Berle believes, the individual will reassert his influence—but as a consumer and voter rather than as a stockholder or pension fund beneficiary. ●

When top management sits on product committee . . .

Profit Becomes the Goal

THIS IS a product committee at work. More accurately, it is management at work. Giving their attention to cost figures are the president, sales vice president, production manager, chief engineer, purchasing manager, and the three sales managers for the Holtzer-Cabot Divisions (small motors, telephone equipment, and vehicle controls) of the U. S. A.'s National Pneumatic Co., Inc.

On the blackboard are some hard facts concerning a fractional horsepower motor the company is considering for production. Present estimated factory cost is $12.34. The hoped-for selling price is $12. This puts the committee's task in clear perspective: factory cost must be reduced by $4.34 if the project is to be worthwhile. Marked for investigation are purchase cost of bearings, winding time, end cap design, lubrication design.

Before the meeting is over (average time in conference is about three hours) the committee will also discuss the profitability of some present products, project progress reports, proposals for product changes and new machinery investments. The men meet three times a month, once for each division.

• **Price Pressure**—Many of the company's products are custom designed for special applications. But even for premium-quality products, competitive price pressures have mounted in recent years. That is why the committee was formed.

One of its first projects was to investigate a servo-motor that was selling for $30, but returning no profit. Between May, 1958, and June, 1959, the committee was responsible for seven changes that cut the selling price to $22.50—and still returned a satisfactory profit. Through material substitutions, new machinery, and improved manufacturing methods—at a total capital investment of $21,400—lamination cost was cut 58¢; stator cost, $3; pole pieces, $2.96; rotor cost, 50¢; frame cost, 93¢, end cap, 22¢; lead wiring, 4¢. And quality of the motor was improved in the process of making it cheaper.

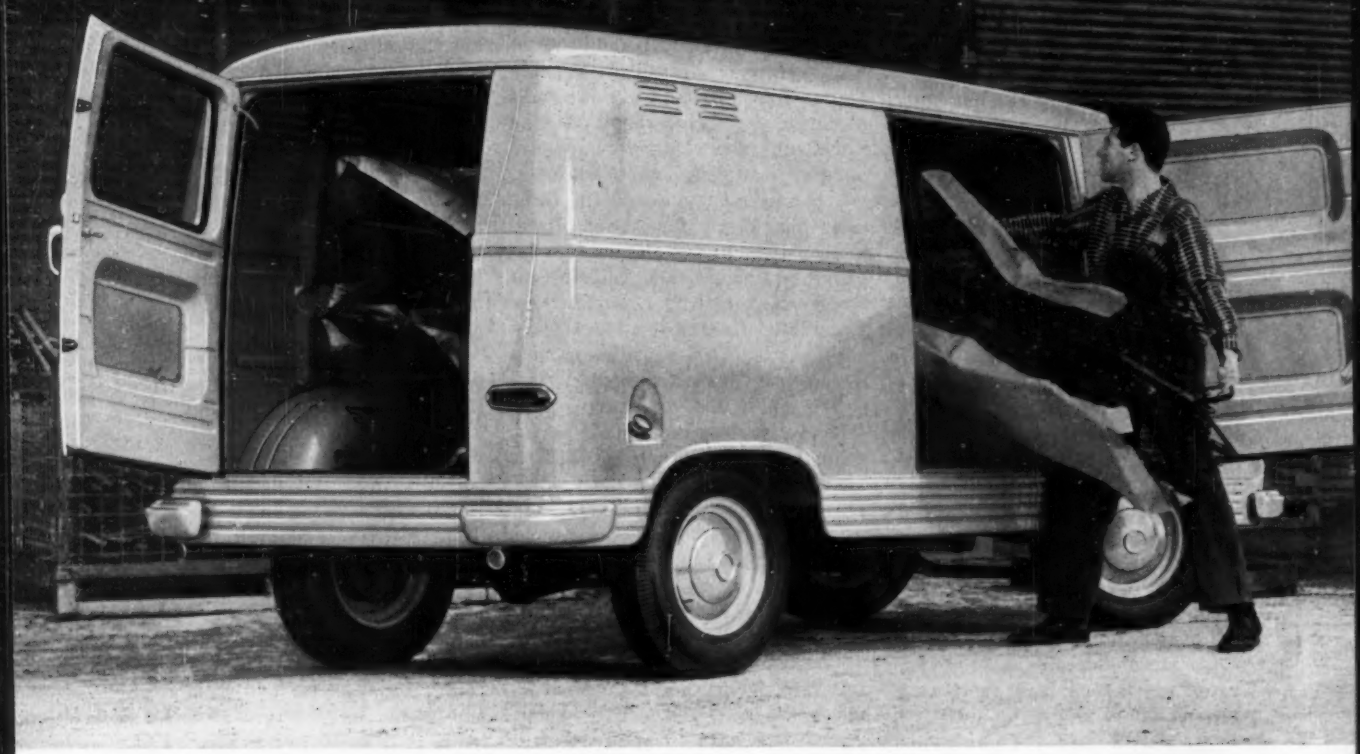
Last year, competition forced the company to cut prices on its telephone equipment. But through the committee's efforts, sales rose 10%, while gross profits were maintained. And gross profits on fractional motors were increased 11%; on subfractional motors, 9%. New sales of over $750,000 were credited to the committee's work and these sales will continue this year.

• **Procedure**—How do new product ideas get started in the product committee? They may originate in the plant, or from a customer's need, or from the sales department. Each proposal must be described and analyzed on a project-request form, which calls for detailed estimates of engineering costs and facilities, production data, annual sales at a specific selling price, cost per unit, and cost of development. Finally the probable schedule from production design to first shipment is estimated.

If the committee approves the proposal, it becomes a project. Then the committee shepherds the project through to final production—and thereafter checks up periodically to see that costs stay in line, that quality holds up, and that the product is serving customer needs. (*Factory, Feb, p71*)

TAUNUS

gives you complete



From Ford of Germany a complete line of quality commercial vehicles – from the popular Taunus vans and omnibusses through a wide range of special bodies.

Reliability is absolutely necessary in your commercial vehicles – and you'll find that each Taunus Commercial is precision engineered to insure reliable performance. Taunus Commercials are available with payload of 1000 or 1250 kilograms; with a choice of dependable Taunus motors 40 and 60 HP (SAE); with a reputation for the best in efficiency, economy and comfort.

For example, there's the Taunus van shown above. Available with either the 40 or 60 HP (SAE) Taunus motor and with either 1000 or 1250 kilos of payload, these vehicles are excellent for dependable rapid transport. The wide rear door opens onto a big, flat loading platform – with up to 5 cubic meters of space. Loading and unloading is remarkably easy. If you wish, the van can be delivered with a side door.

Whatever your commercial needs – van, omnibus, special body or truck – you'll find a Taunus Commercial that will help you save time and money, give reliable service for a long time. Call on your local Taunus dealer and ask for full information on these quality commercial vehicles from Ford of Germany!

RELIABILITY!

Deluxe Omnibus: A dependable and comfortable touring bus for 8 persons. Plenty of luggage space in the rear. Also available as 9 or 10 seater.

Small Bus: An easily converted, all-purpose vehicle. A delivery van with 5 cm loading space; a five seater with big loading area; a comfortable eight seater.

Ambulance: One of many available special outfittings. This ambulance has room for 4-5 patients and one attendant. Ask your dealer about other special bodies.

TAUNUS COMMERCIALS

Quality Masterpieces from **FORD** of Germany

Need a New Plant Site?

The main point to remember: look before you locate. Leonard C. Yaseen (left), authority on plant location, has some advice for management.

WHAT PLAN would you adopt if your expanding firm faced the problem of finding a new plant site? What factors must you consider in a business climate being rapidly changed by regional markets, decentralization, competition?

What course to take is one of the most important management decisions a company can make.

Some of the points that should be at the top of the list were pointed out to INTERNATIONAL MANAGEMENT last month by Leonard C. Yaseen, senior partner of Fantus Factory Locating Service (New York), an authority on international plant location. They are:

—exhaustive analysis of communities and their character;

—land zoning laws and regulations;

—availability of local statistics on labor, power, transport, etc.;

—tax concessions offered by governments.

• **Hard Look**—"A hard look at communities is essential," says Yaseen. The comparison table (below) is typical of the studies Yaseen prepares for clients.

Note the difference in labor costs in the three sites, all in one country, compared in the table. Yaseen emphasizes that decentralization of industry into less-settled communities can be turned into an advantage by the site-seeker. Sizable savings can be made where there is less competition for labor and a lower turnover in personnel.

Decentralization is now a prime need in many industrial areas—especially in Western Europe, where industry is concentrated on the peripheries of large cities. And the labor problem can be especially serious in cities that specialize in only one field (such as the food industry of Dijon, France).

• **Knotty**—Land zone laws—on architecture, traffic, fumes, water use and others—also can present a knotty problem. Some countries, such as Venezuela, have strict regulations; others—Italy, for example—are very liberal. But each community or region within a country has distinctive codes. For instance, changes in land contour or exploitation of resources above or below the surface are forbidden in certain areas. Others have strict codes on the height of buildings.

"The availability of local statistics is very important," states Yaseen. All too often, communities and countries actively recruit new industries but have little usable data on hand to help them decide to stay. Many small nations, in their eagerness to industrialize, tend to ignore this essential information. Sometimes, whole regions are guilty. Few Latin American nations offer the plant site-seeker any helpful statistical information.

• **Taxes, too**—Tax concessions can be very important in the plant-site decision. Yaseen advises: "Prepare your case carefully."

Local as well as national government authorities are almost certain to insist on complete information on the following points: (1) is this a new type of industry? (2) will it increase local employment? (3) will it help absorb the local tax load? (4) is there an export potential for products manufactured? (5) will the site-seeker bring in needed technical knowledge?

"In addition," says Yaseen, "when a company is ready to begin negotiations for a site with a government, it should have its own representative that speaks the language, and should not depend on a local interpreter or 'expediter'."

Yaseen emphasizes these other points for anyone site-hunting:

—Careful market research is essential before a plant is built in a specific community.

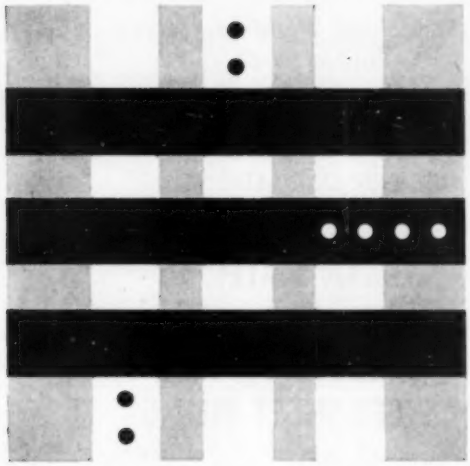
—Study government practices concerning labor; sometimes, when you talk to a union, you actually are dealing with government.

—"Fringe" benefits and local labor traditions are especially important, and may vary from region to region in one country.

And in spite of these precautions, many more problems will arise. ●

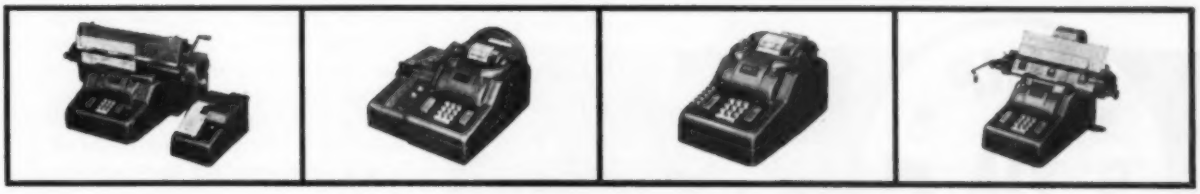
The Choices Facing a Typical Manufacturer
Estimated Cost Comparison Chart

OPERATING EXPENSES	PRESENT LOCATION	COMMUNITY A	COMMUNITY B
Transportation			
Inbound, outbound	$683,547	$573,477	$600,869
Labor			
Hourly, salary	1,800,355	1,594,790	1,401,087
Plant Overhead			
Rent or carrying costs	271,436	290,000	280,000
Real estate taxes	43,345	39,000	34,000
Personal property, other local taxes	16,899	.....	.....
Fuel for heating	19,260	11,000	9,500
Utilities			
Power, gas, water, etc.	93,890	89,316	62,279
State Factors			
State taxes, etc.	98,310	97,400	58,920
Total	$3,027,042	$2,694,983	$2,446,655
Savings through construction of new plant			
New layout, reduced handling, etc.		$(365,000)	$(365,000)
Annual operating costs	$3,027,042	$2,329,983	$2,081,655
Potential annual savings over present location		$697,059	$945,387
Percentage of saving		23.0%	31.2%



Vertical or horizontal working procedure?

Independent of whatever working principle is used, the speed and efficiency you demand of your organization is only possible with the aid of modern office machines.
Addo brings you office machines, for simple or complicated calculation; also accounting systems for integrated or electronic data processing.
From production centers on two continents Addo products are today distributed to over 100 countries.

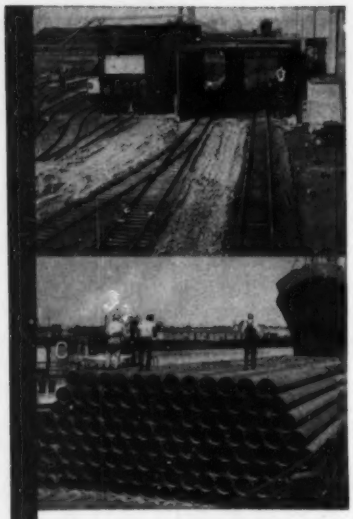


Addo-X Model 7341-80 dual register book-keeping machine with automatic card insertion, which locates precisely the correct writing line. Numerous automatic functions make book-keeping highly accurate and fast, furthermore, reducing the manual work to a minimum.

ADDO base their advance developments on traditional Swedish quality.

Addo-X Model 7341-80

ADDO MALMÖ — SWEDEN — Land of business machines



Specialized Worldwide Service —Backed By 57 Years Experience

"Faster from Foster"

GET OUR QUOTATIONS

NEW and RELAY RAIL TRACK MATERIAL TESTED and STRUCTURAL PIPE STEEL-SHEET PILING

Shipments from mill, or our stocks —among the world's largest. Fast, dependable service at proven savings to you.

FOSTER INTERNATIONAL CORPORATION

An Affiliate of the L. B. Foster Company

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HOUSTON • LOS ANGELES • CHICAGO • ATLANTA • PITTSBURGH

...for more Shipping per Dollar!

Whatever the currency—your shipping capital buys more when you move goods through Philadelphia. Importers with an eye to economy and efficiency find that shipping through Philadelphia pays dividends due to its strategic location, its excellent port facilities and superior transportation services.

DELAWARE RIVER PORT AUTHORITY, Box 817, Camden 1, N. J., U.S.A.

Delaware River Port

PHILADELPHIA • CAMDEN • TRENTON • CHESTER • WILMINGTON

In Management

U. S. MANAGEMENT'S reaction to the tight credit situation has been relatively mild, according to recent surveys. Nobody seems afraid of an actual scarcity of credit, and most companies are prepared to pay even higher rates (the prime bank-lending rate is now 5%). As one executive told *Business Week:* "The interest rate is unimportant when you need money."

Except in a few hard-hit industries—construction, lumber, and retailing — not many companies seem to need big money. True, smaller companies are having a rougher time than the big corporations, as bankers turn down all but risk-free loans. But for the most part, managements have maintained a good liquid position. And their current emphasis is on conserving cash, according to the National Industrial Conference Board. Closer control over inventory investment is the favorite approach.

Only 3% of the 228 companies surveyed by the NICB say tight money will curb their spending plans this year. Most capital spending is coming from the closely hoarded internal funds; but this also means new project proposals will be subjected to a close scrutiny.

Company credit policies, for the most part, are not being changed. A few executives say they are trying to speed up collections to increase cash flow; but at the other extreme, others say they are relaxing credit policies to keep sales volume from slipping.

BUSINESS GAME tournament between top management teams in five midwestern U.S. cities was held last month, with some 200 members of the Society for Advancement of Management participating. Representing 40 imaginary competing companies, the teams hired and fired salesmen, set prices, determined advertising budgets, and allocated inventories. Their decisions were telephoned to computing centers in Chicago and Cleveland, where Remington Rand technicians calculated the results.

BUSINESS EDUCATION makes new gains. The U.S.A.'s Michigan State University has received con-

. . . FOR TEXTILES AND CHEMICALS

. . . FOR BEAUTY IN BUILDING

. . . FOR PROTECTION IN MEAT PACKING

. . . FOR SAFETY IN DAIRY PROCESSING

REPUBLIC ENDURO STAINLESS STEEL

. . . the Metal of More than 10,000 Uses

This is just the material you may need—ENDURO—made by Republic Steel, world's largest producer of stainless and alloy steels. It has proved to be the ideal material for countless uses, both functional and decorative.

As a material for product and processing equipment, ENDURO provides great resistance to heat, corrosion and abrasion. It has an easy-to-clean, lustrous, sanitary surface—solid stainless steel—with nothing to peel or chip off. Its high strength frequently permits reduction in weight.

As a material for decorative uses, ENDURO offers an attractive silvery color in various finishes which harmonize with any color or structural material. It is strong. It is easy to clean and to keep clean.

Republic ENDURO® is easy to fabricate by all modern methods. You can stamp, draw, spin, bend, form, weld, solder, emboss, etch or otherwise work it to meet your needs. It is available in sheets, strip, bars, tubing, wire and many other forms.

Known the World Over for Quality Steels

REPUBLIC STEEL

REPUBLIC STEEL CORPORATION

Export Department: Chrysler Building • New York 17, N. Y., U.S.A.

Cable Address: "TONCAN" • General Offices: Cleveland 1, Ohio

REPUBLIC STEEL PRODUCTS include: Alloy, Carbon and Enduro® Stainless Steels; Rust-resisting Toncan® Iron; Cold Finished Steels; Bars, Shapes, Sheets, Strip, Steel Roofing and Siding, Electrical Steels, Electro-Plated Sheets; Merchant Pipe, Line Pipe, Casing and Tubing for the gas and oil industry, Boiler and Heat Exchanger Tubes, Mechanical Tubing, Conduit; Tin Plate, Terne Plate; Bolts, Nuts, and Rivets; Wire Rods, Wire, Nails and Staples, Fence and Fence Posts; Drainage Products; Steel Building Products; Fabricated Steel Products—Shelving, Steel Cabinets for Kitchens, Storage Bins, Office Furniture, Lockers, Steel Containers. ®Reg. U. S. Pat. Off.

REPRESENTATIVES IN PRINCIPAL CITIES OF THE WORLD

WORLD
YALE & TOWNE
REPORT

MORE USABLE SPACE, LESS HANDLING TIME WITH YALE LIFT TRUCKS

GLASGOW—To use every inch of a warehouse at maximum efficiency, a Yale Electric Truck stacks barrels of butter 14 feet high. Long life and economy of operation are important features of these versatile Yale electric trucks. In capacities from 1,000 to 200,000 lbs.

YALE WORKSAVER MAKES LOADING AND UNLOADING FASTER AND EASIER

WIGAN, ENGLAND—Fast, economical loading of lorries, thereby reducing turn-around time, is a benefit of the compact Yale Worksaver. Here, a forklift Worksaver loads a consignment of bagged fertilizer. Worksavers are available in pallet, platform, fork and tractor models, in capacities up to 7500 lbs. . . . do big truck jobs at small truck cost.

PETROL TRUCKS BY YALE SPEED OPERATIONS "DOWN UNDER"

CHRISTCHURCH, NEW ZEALAND—Handling unwieldy oil drums and stacking them in neat, orderly tiers is quick, easy and economical with a Yale petrol truck. Quality engineering ensures dependable performance, virtually trouble-free service. Yale industrial lift trucks and tractor shovels perform cost-cutting tasks for industries the world over.

- Yale makes the world's most complete line of petrol, LP-gas, electric, diesel and hand lift trucks.
- All Yale industrial lift trucks are uniformly high in quality, wherever manufactured.
- All Yale equipment available in currencies of the free world.
- For further information contact your Yale sales and service representative—located in principal cities of the world.

YALE®
INDUSTRIAL LIFT TRUCKS
TRACTOR SHOVELS
YALE & TOWNE

The Yale & Towne Manufacturing Company, Chrysler Building, New York, U.S.A.
Manufacturing Plants: Velbert Rhld., Germany • Wednesfield Staffs, England • Phila., Pa., U.S.A.
Licensed Manufacturer: Fenwick—Saint-Ouen, Seine, France • Milan, Italy • Barcelona, Spain

tracts to extend its advisory services in Brazil, and to explore business education programs in Vietnam, Pakistan, and Taiwan.

With the aid of Michigan State specialists, the first school of business administration in Latin America was established in Sao Paulo in 1954. This school now includes a 13-week program for top management executives, a four-year school of business administration, a graduate program, and a management research center. A new skyscraper building is under construction.

Under a three-year contract, Michigan State will also work with three federal universities in Brazil: the University of Rio Grande do Sul, the University of Bahia, and the University of Brazil.

ABSENCE RATE in industry, currently being surveyed by the British Institute of Management, is believed to be closely tied to the overall personnel policies of a company. When a firm's absence rate is above average, there is likely to be trouble with productivity.

Absenteeism is beginning to take on greater importance because of labor scarcity in many countries. Statistics are usually hard to come by, but in Britain the loss of working hours due to absence is probably around 5% to 6% a year. In companies with good labor relations, sickness averages about 2% to 2½% of hours worked.

Cost of absence to industry varies widely, from as low as the equivalent of 14¢ per employee per week to as much as $2.10.

NAME CHANGES: Hawaiian Pineapple Co., Ltd., plans to change its name to Dole Corp., conforming to the company's brand name, and making diversification less paradoxical—40% of sales are already in fields other than pineapples.

National Automotive Fiber Co., Inc., had a similar problem. First, it bought an electronics company; then last month the company entered the expanding pleasure-boat field by buying Chris-Craft, Inc. A new name seemed appropriate: NAFI Corp. is its choice.

For the same reason, Bendix Aviation Corp. has changed its name to The Bendix Corp.

LIFE'S GETTING SIMPLER EVERY DAY...

Every discovery makes life simpler for somebody. I.C.I.'s discovery of polythene, for example, has made life easier for housewives by providing them with light, strong, colourful 'Alkathene' kitchenware — from beakers and baby-baths to baskets and brooms. 'Alkathene' has also laid the bogey of the winter "freeze-up", for domestic cold-water pipes of 'Alkathene', instead of bursting, simply expand. In the form of packaging film, 'Alkathene' is protecting and preserving foodstuffs, keeping them field- or factory-fresh. Discovery — and development — are I.C.I.'s business. In spending £15 million a year on the search for and development of labour-saving materials like 'Alkathene', I.C.I. is doing its best to iron out some of life's complications.

IMPERIAL CHEMICAL INDUSTRIES LTD., LONDON, S.W.1

ICI

The man in the Hathaway shirt

MORE AND MORE Americans are realizing that it's silly to buy good suits and then spoil the effect by wearing ordinary mass-produced shirts.

Hence, the popularity of Hathaway shirts, which are in a class by themselves. Examine the stitchwork: Oxford, for instance, starting at the collar and working downward.

The button-down collar has the neat shorter points to complement today's slimmer suits. Its roll is unobtrusive. Soft and comfortable—but never puffy.

Those pencil stripes feature the subtle *Ascot Madder* colorings—Persian Blue (still lustrated), Kashmir Beige, and Willow Gray. Note how perfectly the stripes match at the seams. That's a famous Hathaway hallmark.

Finally, the whole shirt is cut and tailored with unusual generosity—and is therefore more comfortable. The tails are longer and stay in your trousers. And even Hathaway's stitching has an ante bellum elegance about it.

You might expect to pay through the nose for such a shirt—but it costs less than $8 in stripes, solid colors and white. For store names write C. F. Hathaway, Waterville, Maine. Call OXford 7-5566 in New York.

THE NEW HOME TOWN SUPERIOR

An image for the brand

LEÇON FRANÇAISE DE L'AUTOMOBILE or, how to make your driving fun again. L'ÉCONOMIE: get up to 40 mpg; go on a week-end trip on one tankful of gas; use the savings to buy things you've been putting off!
Le Confort: 4 doors for easy-out, easy-in; astounding head-room, foot-room; fatigue-free riding.
LA MANEUVRABILITE: scoot in, around, through and out of heavy traffic easily; turn effortlessly; only 155 inches (!) of car to park. Le Dealer Network: over 800 coast-to-coast sales, service and parts headquarters, 150 more in Canada. La BEAUTE: styled in Paris, made in France: six solid colors to choose from, handsome contrasting upholstery.
LES EXTRAS: very sporty sliding sun-roof, optional. Ferlec automatic clutch, both
LA GRANDE DIFFERENCE: EVERYTHING YOU WANT IN A CAR (INCLUDING A 7 CU. FT. TRUNK) AND YET ONLY $1645. POE N.Y. Le Next Step?
Le Car Hot: RENAULT Dauphine

Exciting type faces, light-hearted copy

Empathy

Creative Ads Challenge the

PAUSE along Madison Avenue, New York's advertising row, and you soon hear talk of "creative" advertising. Though there is no precise definition, you will soon discover that by "creative" advertisements Madison Avenue seems to mean those marked by showmanship, imagination, good design, persuasive but believable text—and not least of all, good taste. The examples on these pages show what all the talk is about.

The reason for the talk, however, is not merely a sudden new admiration of the advertising man's art. In Washington, the U.S.A.'s Federal Trade Commission is making it clear that the flagrant excesses of "hard sell" consumer advertising will no longer be tolerated. From now on, the FTC says, American admen are expected to tell the truth.

• **Soul-Searching** — What the "truth" means in practice is a subject of hot debate. But the quick-witted specialists along Madison Avenue are also doing some serious soul-searching. And because of the fast-expanding international activities of American advertisers and advertising agencies, their deliberations will reverberate around the marketing world.

The tone was set by a recent article in *Printers' Ink*, an industry trade journal:

"What has happened," observes the writer, "is that much of advertising's imagination, ingenuity, skill, and effort have gone into developing questionable techniques . . . demonstrations that do not prove anything, 'proof' that has no basis in fact, 'facts' that have no basis in reality, 'claims' that have no basis in anything."

• **The Case for Creativity**—Creative advertisements are being singled out to show that successful advertising—even for mass-produced consumer goods—can be honest, cheerful, and even humorous.

A sure sign of the creative advertisement is the absence of cliché. Note the description of Del Monte peaches: "They're floppy—they're fabulous. They're ragged and soft and old fashioned." And the light-hearted misuse of French in praising the Renault Dauphine: "Le Car Hot."

But the case for creativity goes beyond felicity. The campaign for Volkswagen, prepared by the fast-growing Doyle Dane Bernbach agency, is cited as proof that it is possible to present factual claims creatively. The example above makes the important point that Volkswagen parts are not hard to get—even in out-of-the-way places such as South Dakota.

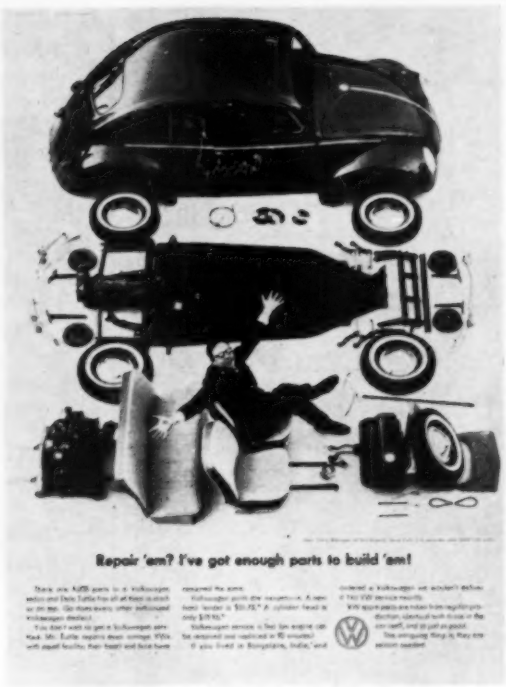
And the case goes beyond technique.

"The manufacturer who dedicates his advertising to building the most favorable image," argues David Ogilvy of Ogilvy, Benson & Mather, "is the one who will get the largest share of the market at the highest profit—in the long run."

Ogilvy's favorite technique is to build a brand image through a human personality. Over the past few years, "the man in the eye patch" has convinced millions of Americans that the wearer of a Hathaway shirt is a man of sophistication, experience, and distinction. In a similar campaign, Ogilvy

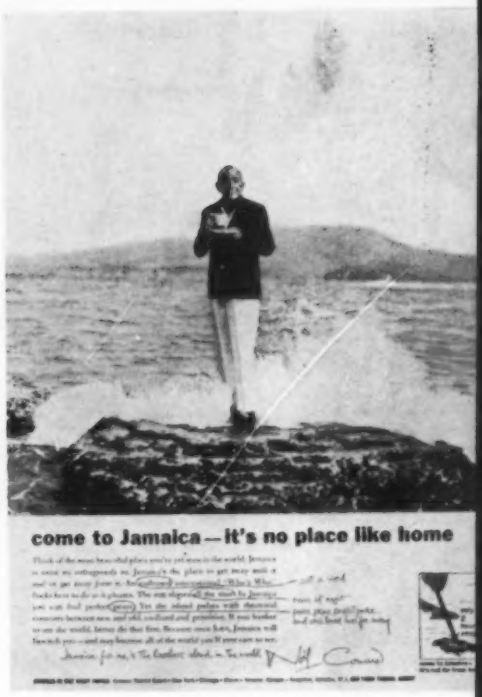
…val maiden in my *maidenform* bra

with secret dreams



Repair 'em? I've got enough parts to build 'em!

Showmanship, believable claims



come to Jamaica—it's no place like home

People-centered and subtle

"Hard Sell"

They're floppy—they're fabulous. They're ragged and soft and old-fashioned. That's Freestones for you. And these, dear reader, are some of the greatest Freestones you'll ever eat. For when it comes to peaches, Freestone fans and Del Monte see eye to eye:

…e both put flavor first. We select Del Monte Freestones for their …ste, not their looks. We choose syrup that brings out natural fruit …avor, instead of drowning it in sugary-sweetness. We honestly feel …ese Freestones are the closest thing yet to orchard-fresh peaches. …ext time, take home Del Monte' Brand, for real Freestone flavor.

Fresh, persuasive copy

Deft humor for contrast

A PAID TESTIMONIAL FROM BERT LAHR FOR SKIPPY PEANUT BUTTER

How did we get Bert Lahr to appear in an ad for Skippy Peanut Butter? Easy. WE PAID HIM. We approached Mr. Lahr with a lot of money (really not too much, since we had it changed into small bills and it made quite a fistful). At first Mr. Lahr looked incredulous (either that or he'd just backed into something sharp).

"*What*," he shouted in his deep persuasive voice, "*You ask a full grown man (5' 9") to endorse peanut butter! Peanut butter is strictly for kids, and I haven't reached my second childhood yet.*"

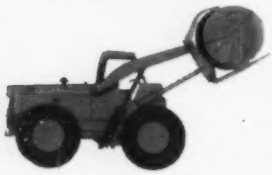
We sent out for more money and at last Lahr into tasting Skippy. Results appear in t… unretouched photo above. "Oh, good, good," he cried. "*Skippy doesn't taste like peanut bu… ter—it tastes just like* peanuts. *It's edible! I… incredible! I love Skippy to pieces!*"

Like we've said all along: Skippy® is the on… peanut butter made on purpose for grown-up… Stays fresh, easy to digest, because of the exc… sive, patented way it's made. And it tast… exactly like fresh-roasted peanuts.

if you like peanuts, you'll like Skippy

LIFT TRUCKS

TRACTOR SHOVELS



LOGGING EQUIPMENT

TRACTOR DOZERS

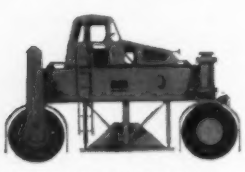
EARTHMOVING SCRAPERS

TOWING TRACTORS

CLARK

—the complete material handling line

250 BASIC MODELS AND SIZES TO FIT EVERY MATERIAL HANDLING PROBLEM

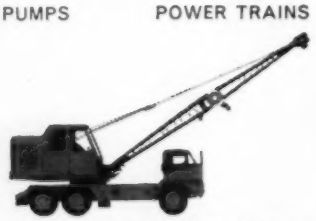


STRADDLE CARRIERS

HYDRAULIC PUMPS

POWER TRAINS

POWERED HAND TRUCKS



EXCAVATOR CRANES

TRUCK-TRAILERS

TRUCK BODIES

CLARK EQUIPMENT

CLARK EQUIPMENT INTERNATIONAL, C.A.
Apartado 2717, Havana, Cuba

Construction • Material Handling • Truck Trailer Equipment

Manufactured in Argentina, Brazil, Belgium, England, France, Germany, Australia, Japan, Canada, and U.S.A.

persuaded the chief executive of Schweppes, Commander Edward Whitehead, to become the "Schweppes man." He is now recognized everywhere he goes.

Another creative-minded agency, Norman, Craig & Kummel, believes that advertising should begin with people, rather than product claims. "Exaggerated product claims do not sell goods because people do not believe them," comments agency executive Norman B. Norman.

Norman says that people-centered advertising is effective for all kinds of products. In effect, an advertisement must tell the consumer, "I know all about you." The principle is carried out in the agency's campaigns for Maidenform brassieres and for the Jamaica Tourist Bureau.

• **Emphasis on Theory**—Even advocates of humor in advertising are articulate about their objective—and it is not merely to amuse. "Humor lifts the selling effort to an emotional plane," explains David Bascom of San Francisco's Guild, Bascom & Bonfigli agency. "It endows the product with a likeability that causes it to sell even though the product is not distinguishable from the competitor's."

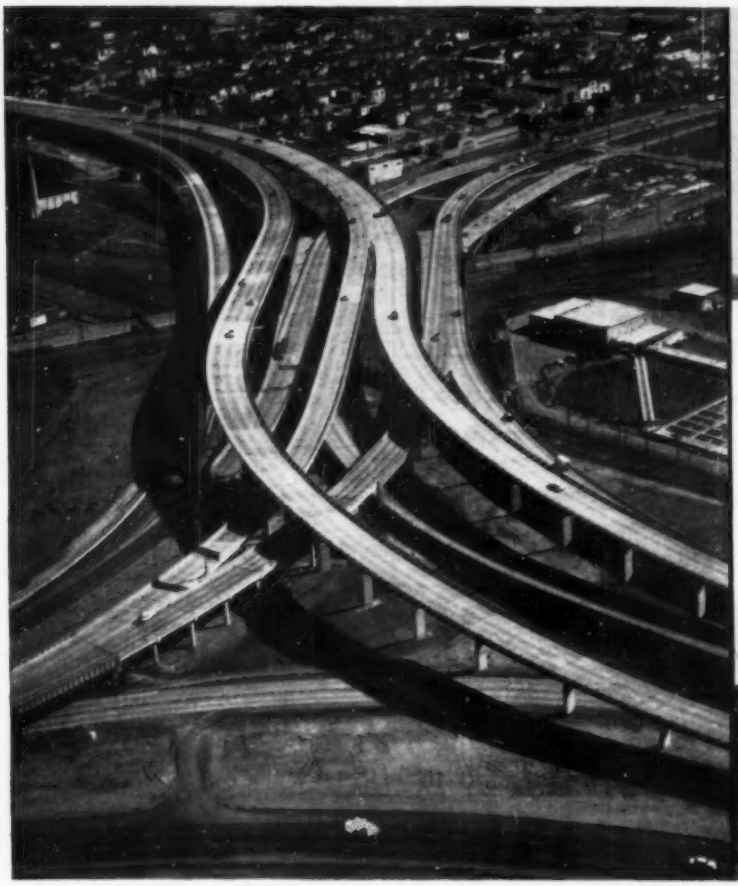
Furthermore, Bascom points out, the light touch contrasts with "sober-sided and sometimes extravagantly unbelievable advertising." Bascom's campaign for Skippy peanut butter is a widely acclaimed example of successful tongue-in-cheek advertising.

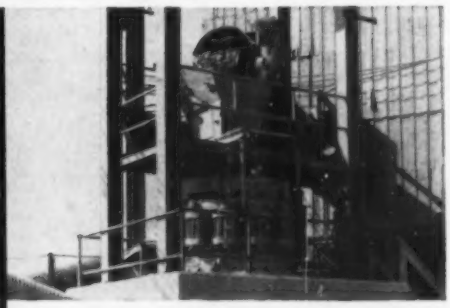
• **Support from Clients**—While the arguments for creative advertising come from advertising executives, the money must come from clients. A growing number of manufacturers are beginning to question the propriety of their advertising. Arthur Meyerhoff of Arthur Meyerhoff & Associates describes a recent experience involving a series of television advertisements:

"In our case, the most effective commercial we have had in a long time actually was devised by the head of the Wm. Wrigley, Jr., Co., for Wrigley's chewing gum. It grew out of his conviction that the sale of his products is determined in the long run largely by the public good-will.

"He personally worked out our current commercials, which not

BIG TONNAGES of quality aggregate produced at low cost with SYMONS® Cone Crushers





for STATIONARY service . . . Symons Cone Crushers are built in Standard, Short Head, and Intermediate types, with crushing heads from 22" to 7' in diameter—in capacities from 6 to 900 or more tons per hour, for primary, secondary and finer reductions.

for PORTABLE service . . . Symons Cone Crushers are being used in increasing numbers for portable and semiportable crushing plants. Illustrated is a typical Cedarapids® Intermediate Scalping Unit, using a 4-ft. Symons Cone Crusher.

Striking example of modern highway construction is this view of a new "Freeway" in the State of California, U.S.A.

XC-359

The big tonnages of specification aggregate, bituminous mixes, crushed sand and cement required to meet the ever-increasing needs of the construction industry are produced by Symons Cone Crushers at low cost. Good reasons why these efficient crushers are the leading choice of producers and contractors building highways, dams and hydro projects, bridges, as well as commercial building construction.

It will pay you to specify and use Symons Cone Crushers for both stationary and portable service. *Write for descriptive literature.*

NORDBERG MFG. CO., Milwaukee 1, Wisconsin, U.S.A. Cable Address: NORDBERG

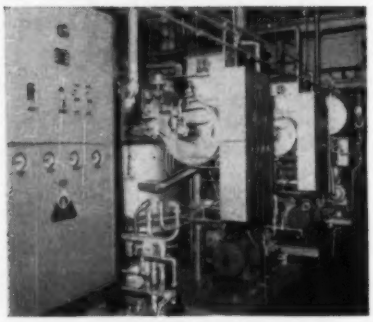
LONDON: 19 Curzon St., W. 1
JOHANNESBURG: 6 Hollard St.
MEXICO, D.F.: Dolores 3

NORDBERG THE WORLD OVER

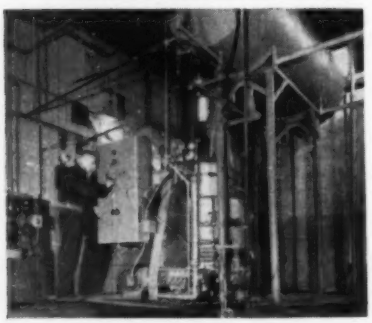
Represented in principal trading areas throughout the world

© 1959, Nordberg Mfg. Co.

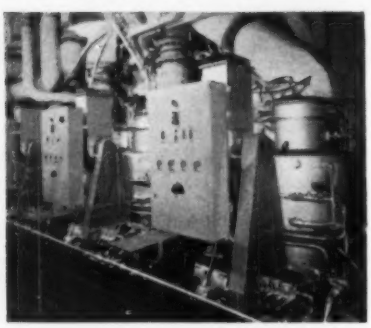
LOW COST STEAM



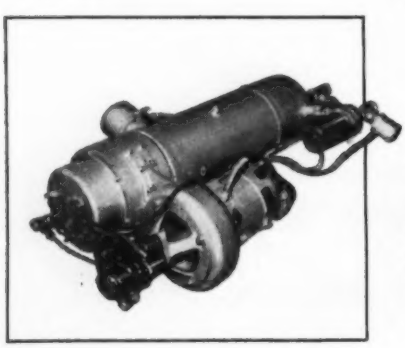
* Vapor Steam Generators in new manufacturing plant boiler room will save about $30,000 per year.



* Canning factory reduced costs and increased production with a Vapor installation.



* Compact, clean installation on Canadian tanker producing 17,000 lbs. of steam an hour.



Model B-70

New, proven Vapor water heater for buses, diesel locomotives, trucks, construction equipment with 70,000 B.T.U. output.

PROOF THAT VAPOR GENERATORS DECREASE COSTS ...IMPROVE PLANT EFFICIENCY

Vapor Steam Generators will solve your steam problems whether you need steam for manufacturing or heating...whether you operate a bakery or a fleet of tankers... Vapor will give you the pressure and capacity you need, when you need it, at the touch of a button. Vapor Steam Generators deliver steam in two minutes from a cold start and cost less to install and operate. They are manufactured in eight sizes from 10 to 160 h.p., deliver from 300 to 5000 lbs. per hour at 15 to 1000 p.s.i. and are completely automatic. It will pay you to install these units.

VAPOR

VAPOR INTERNATIONAL CORP. LTD.

224 South Michigan Avenue
Chicago 4, Illinois

only avoid any wild claims, but in a way subordinate all claims to a friendly series of suggestions. These commercials are bringing in congratulatory mail, an almost unheard-of development. . . ."

• **Hold-Outs** — Despite the splurge of creative advertising, however, there remain some firm believers in the "hard sell." Ted Bates, Inc., recently took a full page advertisement in the *New York Times* to announce that it would fight condemnations by the Federal Trade Commission. Chairman Rosser Reeves, in fact, reacted with malicious delight when a panel of experts on creative advertising included three of his most successful campaigns in its list of the worst advertisements in recent years.

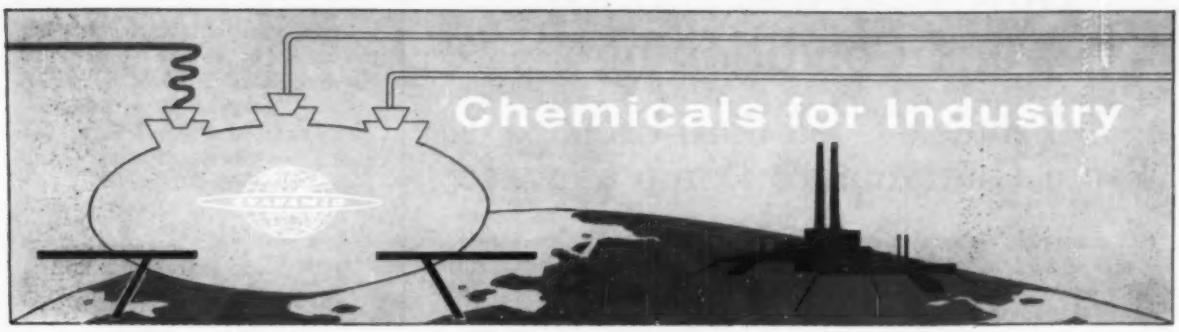
Reeves admits that some of his clients use "the brute force of money" to sell goods. "I grant you that our advertisements may seem dull," he says. "But, oh, do they sell soap!" (*Printers' Ink, Feb*12, *Jan*29; *Business Week, Oct*10)

Toward Better Sales Ethics

"BETTER BUSINESS BUREAUS" are nonprofit service organizations established and supported by the business community to fight fraud and encourage ethical commercial practices. At a time when the businessman's ethics are under scrutiny (IMD, Mar, p16), the fact that better business bureaus are springing up around the world takes on added significance.

The drive is coming from business service clubs, chambers of commerce, consumer groups, advertising associations—and zealous individuals. But the fountainhead of information is the Association of Better Business Bureaus in New York, whose member bureaus in North American cities are supported by 90,000 companies in all lines of enterprise. The Association's first affiliate outside the U. S. A. and Canada is Mexico City's Etica Comercial, which becomes a full member in June.

• **Widespread Interest** — Buenos Aires' Instituto de Veracidad Publicataria is organized along similar lines; and "eticas comerciales" are being formed or studied in Caracas,



At the Service of "Operation World Industrialization"

As the world economy enters the "soaring sixties," more than 3000 Cyanamid Chemicals serve manufacturers everywhere. During its half century of participation in the growing world economy, Cyanamid has diversified its line so that whatever your industry, there are Cyanamid quality chemicals to help decrease your production costs, increase your profits.

These Cyanamid products . . . and 3000 more . . . help manufacturing efficiency in these industries . . . and can help in *yours*, as well.

Laminates: CYMEL* melamine formaldehyde for decorative and industrial surfacing.

Soaps & Detergents: CALCOFLUOR* white, brightening agents for whiter, brighter laundry; other CALCOFLUOR whites for use in the paper and textile industry.

Paints & Surface Coatings: Thickening agents, a complete line of pigments including UNITANE* titanium dioxide. A complete line of coating resins including CYZAC* coating resins for baking industrial finishes, and MELAQUA* 600, of special interest to the automotive industry.

Paper & Printing: ACCOSTRENGTH* 2386, improves paper and paper board dry strength.

Brand New! PAPER PRODUCT 2414-B, a water-soluble polyacrylamide resin, now being used in the paper industry to improve the retention of fines and pigments.

Plastics: LAMINAC* polyester resins for plastics reinforcement, CYMEL adhesive resins for hot-pressing, and CYMEL molding compounds.

Process: AEROSOL* wetting agents, melamine, many intermediates for industry, including dicyandiamide.

Rubber: Antioxidants, plasticizers, retarders and accelerators, including the new CYDAC* flake form, for tire treads, footwear, etc.

Textiles: A complete line to impart spot repellency, wrinkle resistance, including AEROTEX* 23 Special, a new heterocyclic cross-linking agent.

New Products: CATANAC*, an anti-static agent valuable to textile and plastics manufacturers. CYASORB* U.V. absorbers to prevent plastic degradation by ultra-violet rays.

a world of good for the good of the world

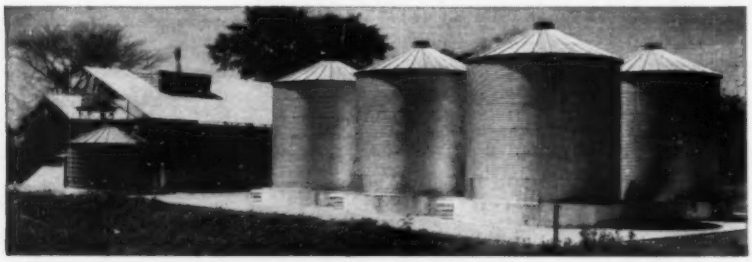
CYANAMID INTERNATIONAL
A Division of American Cyanamid Company
General Chemicals Department
30 Rockefeller Plaza, New York 20, N. Y.

*Trademark

How Regional Storage and Conditioning

Protects Good Corn Crops From Guatemala's Damp Climate

Guatemala's rich damp bottomlands are ideal for growing fine crops of corn . . . but keeping the crops in storage was another problem . . . they spoiled fast in the humid climate. Small but complete regional conditioning and storage plants, easily accessible to the growers, have been found to be the answer, after research by the Instituto de Fomento de la Produccion—the Guatemala development commission. Working with Columbian engineers, INFOP has established five such plants in the corn growing regions. Each plant has facilities for receiving, weighing, drying, cleaning, fumigating, aerating and storing the corn produced in that area.



More than 26,000 bu. of storage capacity is provided by eight Columbian Steel bins at each of Guatemala's five regional grain storage and conditioning plants. The bins are equipped with perforated steel floors and use portable aeration units for grain conditioning.

A Columbian 40′ x 80′ Rigid Frame Warehouse contains the administrative offices, receiving equipment, and storage area for sacked grain. A screw conveyor takes the corn to the drying and cleaning facilities in an adjoining open-sided Columbian lean-to building. A 1,000 bu. Columbian Red Top Grain bin is used for Fumigating bagged grain. Bulk corn is stored in eight Columbian 3,300 bu. Grain Bins equipped with Columbian perforated floor conditioning systems. The bins are filled and emptied by portable augers and the portable conditioning units can deliver warm or cool air as the occasion demands.

Pioneers in steel grain storage and grain conditioning equipment, Columbian has helped many friendly nations and individual firms solve their grain conservation problems with Master-Crafted Columbian steel bins, steel buildings, grain elevators, grain handling and conditioning equipment.

Columbian will be glad to consult with you on your requirements. Write **Columbian Steel Tank Company, International,** P. O. Box 4013-F, Kansas City, Missouri. Consult Columbian also for contract steel fabrication.

Receiving equipment, sacked grain storage and administrative offices are housed in a Columbian Rigid Frame Building at Guatemala's regional grain plants. The grain drying and cleaning facilities are in the open side shed building whose steel roof can be seen behind the main building. The smaller bin at right is used for fumigating bulk grain.

Santiago (Chile), La Paz, Panama City, and San Juan.

Association officials say bureaus are likely to appear soon in the "Down Under" cities of Devonport (whose Rotary Club is especially interested) and Hobart in Tasmania, Sydney and Perth in Australia. Groundwork has also been done in London and Liverpool, Tokyo, and Manila. And information about "BBB" organization has recently been sent to interested groups in Valencia, Tel Aviv, Stockholm, Durban and Salisbury in Africa, and several cities in India.

The Association provides literature on the purpose of a "BBB," how to organize and operate a bureau, even a formula for allocating membership dues. A bureau is controlled by its own membership, through a president and board of directors. The program is carried out by a professional manager and staff of investigators.

• **Watchdog**—A typical example is Mexico City's Etica Comercial, which was organized last year with 150 charter members under the sponsorship of the Rotary Club. The bureau does not recommend any products, services, or stores. Its job is to collect factual information on commercial practices, advertising claims, and sales offers, and to investigate complaints.

The bureau issues a warning bulletin on bad business practices that goes to 3,000 subscribers. But most problems never reach the bulletin stage. All "special offers" advertised by local firms are checked out by Etica investigators. If the offer is false or misleading, a formal complaint is sent to the store (the bureau's work is aided by an imposing letterhead). Nine times out of ten, comments Manager Jorge A. Barranco, the store heeds the warning. Stores that do not get a "plug" in the bulletin.

The bulletin also warns against the latest frauds and swindles—phony charity drives, phantom "repairmen" who disappear with television sets. But Barranco says the bureau's biggest job is educational.

"Top management is usually so high up it rarely looks down to see what is happening at the level of consumer contact," he says, "and customers seldom speak up to top management. We make the introduction." ●

ALLIS-CHALMERS HD 6G

UNSURPASSED

for fast excavating and loading work

OWNERS like the new Allis-Chalmers HD-6G tractor shovel. They like the new design features that mean better performance at lower cost — its new comfort, convenience, servicing simplicity and big-tractor strength.

The HD-6G reaches far out and high — more than 2.75 m dumping height — as much as *30 cm higher than ordinary tractor shovels* . . . reaches to center of big, sideboarded trucks.

Curved-bottom bucket puts a leverage force of 9,750 kg at the cutting edge . . . breaks out tough materials—gets full loads fast.

The HD-6G also features speed and stability with precision control. It is shifted from any forward speed to reverse with a single lever. Simple hydraulic controls and unobstructed visibility enable operator to manipulate the bucket with great ease and accuracy. More than two meters of track on the ground assure maximum stability. Extra strength is provided by solid steel booms and linkage.

For complete information on this new tractor shovel or any of the three larger sizes, consult the Allis-Chalmers construction machinery dealer in your area, or write us.

ALLIS-CHALMERS INTERNATIONAL, Department MD460, Milwaukee 1, U.S.A.

ALLIS-CHALMERS

BUILDERS OF MACHINERY SINCE 1847

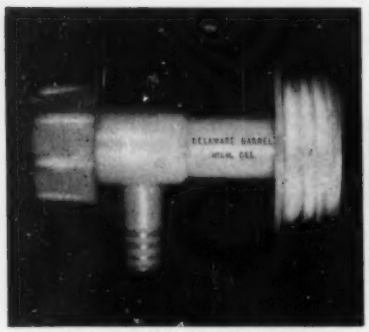
72 net engine hp
Weight: 9,525 kg (21,000 lb)
1.15 m³ (1½-cu-yd) general purpose bucket
2.75 m (9-ft) dumping height
40° bucket tip-back
Fast reverse to 6.5 kmph (4.1 mph)
Rugged booms and linkage

Serving the World's Power Needs

Allis-Chalmers builds basic machinery for the world's major industries. A partial list of products includes steam and hydraulic turbines, motors, condensers, transformers, switch gear, voltage regulators and other electrical equipment for power generation, control and distribution; gyratory crushers and grinding mills for ore processing; centrifugal pumps for water and sewage processing; kilns for cement manufacture; crawler tractors and other earth-moving and material handling equipment; internal combustion engines; wheel tractors and other farm equipment; nuclear reactors; equipment for atomic power plants and thermonuclear research.

AMCEL

WORLDWIDE SUPPLIER OF PLASTICS



Valve assembly of Fortiflex resists corrosives

Beautiful housewares withstand boiling water

Baby dish of Fortiflex won't break if it is dropped

Vaporizer container is electrically safe, can take heat

Look to Amcel for:

Plastics

- Cast Acetate Film and Sheet
- Extruded Acetate Film and Sheet
- Cellulose Acetate Molding Compounds
- Cellulose Propionate Molding Compounds
- Polyvinyl Acetate Emulsions
- Low Pressure Polyethylene Molding Materials
- Polyester Resins

Chemicals

- Acids
- Aldehydes
- Lactones
- Polyols
- Vinyl Monomers
- Acrylates
- Alcohols
- Esters
- Glycols
- Ketones
- Plasticizers
- Functional Fluids

Fibers

- Acetate (filament, staple, spun)
- Arnel Triacetate (filament, staple, spun)
- Solution Dyed Acetate
- Type F Acetate Staple
- Acetate Carpet Fiber
- Type K Acetate Staple
- High Tenacity Rayon
- Rayon
- Cellulose Acetate

Amcel at your service in:

Australia, Austria, Belgian Congo, Belgium, Burma, Denmark, Egypt, England, Finland, France, Greece, Holland, Hong Kong, India, Israel, Italy, Japan, Korea, Lebanon, Mexico, Morocco, New Zealand, Norway, Pakistan, Philippines, Poland, Portugal, Rhodesia, South Africa, Spain, Sweden, Switzerland, Syria, Taiwan, Turkey, West Germany

Fortiflex . . . One of the family of Amcel plastics

Fortiflex, a new type of polyethylene, differs greatly from previous polyethylenes: This plastic is hard, rigid, unbreakable—not soft and flabby—and it can withstand boiling water. Fortiflex has a smooth, lustrous surface; it comes in rich colors and is so lightweight that it floats. Economical, too!

No wonder Amcel Fortiflex is creating a revolution in housewares, in toys, in parts for industry, in bottles and containers for packaging! Amcel representatives throughout the world will be glad to show you just how important this plastic can be in making better products and achieving economies in design and production.

Amcel, Arnel, Type F, Type K and Fortiflex are trademarks.

AMCEL CO., INC.

180 Madison Avenue, New York 16, N. Y. . Affiliate of Celanese Corporation of America

New Technique Forms Huge Nylon Shapes

Massive nylon sections weighing up to 180 kg and measuring 80 cm wide, 6.5 cm thick, and 2.55 meters long, are being produced about 25% cheaper than before, according to Polymer Corp. Extrusion-molding methods requiring pressure, usual for shaping nylon, are difficult and costly when applied to large pieces. By the new method, costs of the large shapes are made more competitive in many applications (wear plates, large rollers, etc.) where nylon has advantages over nonferrous metals or stainless steel. Other shapes to follow include round rods, flat stock, rubing, disks, hexagonal and square stock. *Polymer Corp., Reading, Pa., U.S.A.*

Desk-Top Postage Machine Licks, Stamps and Stacks

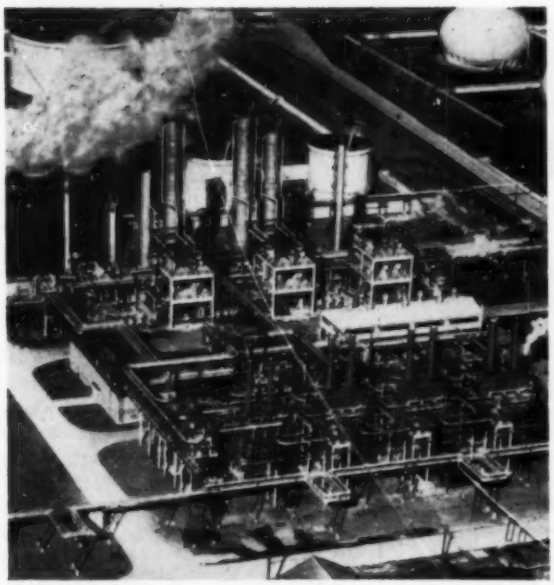
A compact new mailing machine not only puts metered postage on letters but seals and stamps them as well—an achievement hitherto possible only on larger, more expensive machines. The 12½-kg machine has a detachable meter for refilling. Finger-tip levers allow the user to select a wide range of postage denominations; the meter stamp prints on letters, or on gummed tape for parcel post. *Pitney-Bowes, Inc., Stamford, Conn., U.S.A.*

Year-Round Cooling Fluid

"The nearest thing to a sealed cooling system" is one expert's description of a new coolant for automotive engines called Dowgard. The fluid, which is not just an antifreeze, will protect engines against freezing, overheating, or corrosion, from −4C to 116C for a year, says the company. It can be installed at any time of year. *Dow Chemical Co., Dover, Ohio, U.S.A.*

Radiation Detector—Smaller than Pinhead

Unlike the costly, heavy, fragile radiation detectors used at present in nuclear power control and other fields, this new solid-state ionization chamber costs less than $10 a unit. It is a transistor-like device —essentially a very thin slice of treated silicon. When struck by a charged nuclear particle it emits an electrical pulse that can be measured and analyzed. Present and future applications include space exploration, nuclear power control, industrial process control, and the treatment of cancer. *Hughes Air-*



KULJIAN SERVES PROGRESS
. . . THE WORLD OVER !

The Kuljian record of success in design and construction is reflected in numerous projects on five continents. The broad scope of Kuljian experience ranges from power plants and public works of all types . . . to new and expanded manufacturing, assembly, process and research facilities for industry and government.

Kuljian will handle all phases of your project from feasibility report through initial operation. Write today for comprehensive brochure.

WE DESIGN AND CONSTRUCT
Power Plants • Public Works • Processing Plants
Oil Refineries • Chemical Plants • Textile Plants
Airport Facilities • Military Installations

The **Kuljian** *Corporation*
engineers • constructors
1200 NORTH BROAD STREET • PHILADELPHIA 21, PA., U. S. A.

1008

DESIGN • ENGINEERING • PROCUREMENT • CONSTRUCTION • REPORTS

craft Co., Florence Ave. & Teale, Culver City, Calif., U.S.A.

Pumps by the Pinch Effect

Designed to substitute for conventional pumps, this British device "pinches" liquids, powders, and gases along a gently-curved track. It consists of a rotor with three rollers that squeeze the pipe and drive the substance ahead as it is sucked in from behind. The suction effect, say the manufacturers, makes it possible to generate and hold a "considerable degree" of vacuum (down to at least 1 mm Hg), and to use the pump as an oil-free compressor. *Watson-Marlow Air Pump Co., Marlow, Bucks., England.*

Binocular Takes Pictures

The Binoflex camera-cum-binocular is among the latest photographic devices to come from Japan. The camera has an f:3.7 Panorax lens and a 30-exposure magazine. The binocular itself has 400-mm 1.8 teleconversion lenses, and magnifies 15X. *Teikoku Special Optical Laboratory, Kawasaki, Japan.*

Paper Pallets

The manufacturer claims that his corrugated paper-board pallets are inexpensive, rugged, light, and can be used with any conventional materials - handling equipment. Called Econ-O-Pallets, they weigh less than ½ kg, but are said to handle loads of over 12,000 kg. They are made of paper-board reinforced with wood veneer for added strength. The "lifting channels," also of wood veneer, are spaced to fit normal fork-lift tines. Pallets are shipped flat to the user, who then assembles them as needed. *Materials, Inc., P.O. Box 24, Oakland 4, Calif., U.S.A.*

In brief . . .

Translating machine—English into Japanese—with 400-500 word memory comes from *Mitsubishi Electric Co., No. 3, Marunouchi, 2-Chome, Chiyoda-ku, Tokyo, Japan* . . . **Magnetic racks** (Magna-Rax) for carrying parts along a conveyor, from *Eriez Mfg. Co., 95 Magnet Drive, Eriez, Pa., U.S.A.* . . . First Netherlands commercial **electronic computer,** with 32,000-word memory, has been developed by *N. V. Electrologica, 2 Boerhaavestraat 49, Amsterdam, Netherlands.* . . . Fruit-picking is mechanized by a **tree-shaking device** (to be mounted on tractor) and catching frames. *Kenneth H. Hess Co., P.O. Box 296, Healdsburg, Calif., U.S.A.*

The 'Vulture' a sturdy, heavy-duty machine for polishing or scrubbing large floor areas. When used with its companion the 'Dipper' vacuum drier, as illustrated below, floors are scrubbed and dried ready for immediate use.

Floor cleaning is a job for a

Cimex

THE WIDEST RANGE OF FLOOR CLEANING MACHINES IN THE WORLD

Scrubbing and polishing with a single machine. Photo by courtesy of W. Harold Perry Ltd. Main Ford Agents, Edgware, Middlesex, England.

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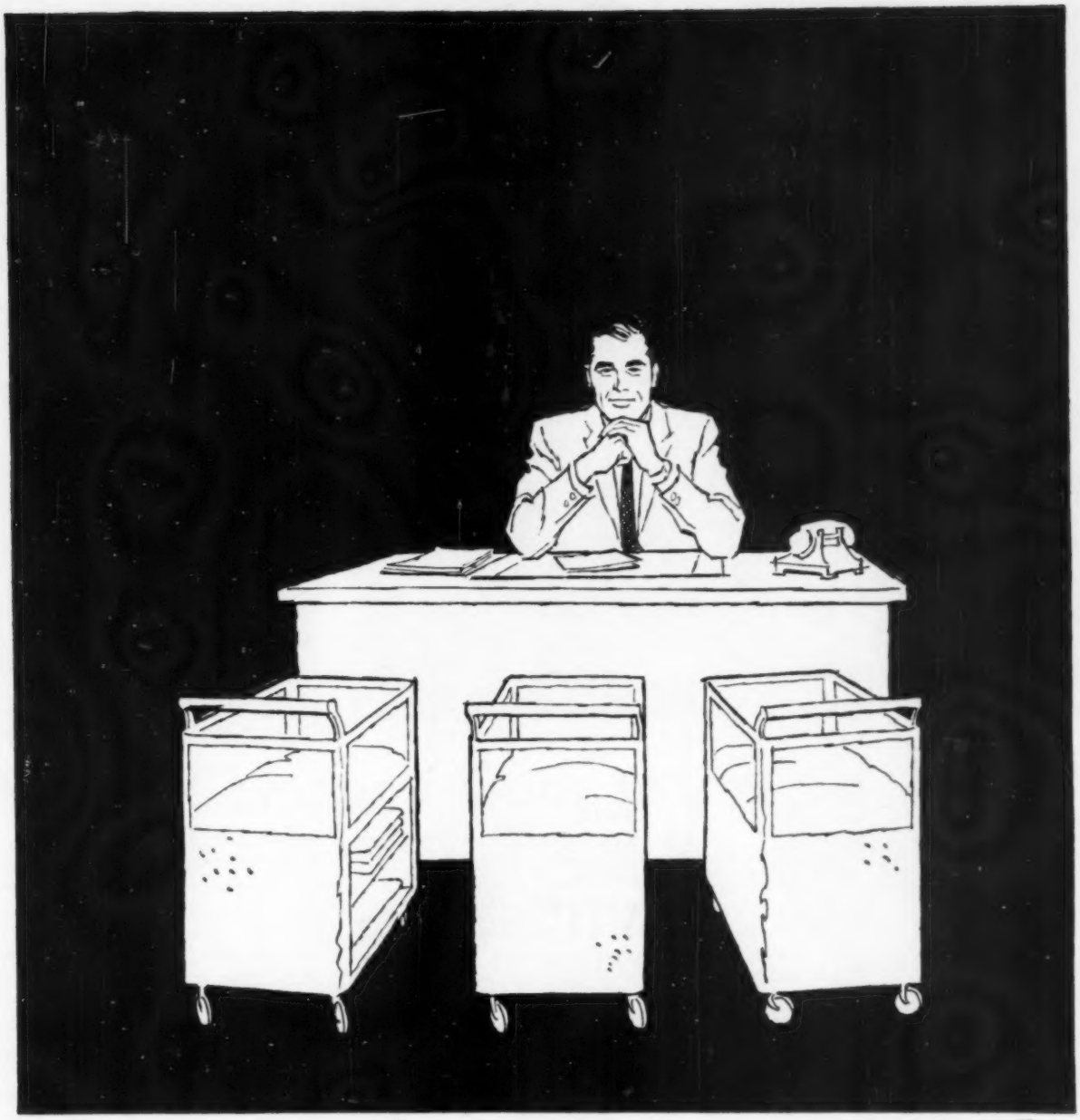

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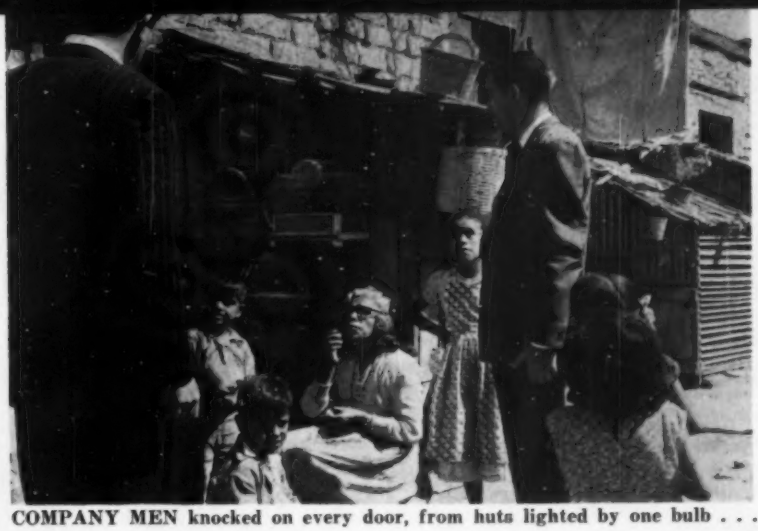


COMPANY MEN knocked on every door, from huts lighted by one bulb . . .

. . . to plush casas grandes that wanted—and bought—44 electric ranges.

Power Company Goes to the People

AN OLD WOMAN cautiously opened the door of her adobe hut in Puebla, Mexico, and eyed a stranger in a business suit. He said he was from the electricity company, and they wanted to know if they could help her. Did she need any more light, or an electric iron, perhaps? Were her bills too high?

The woman's face wrinkled into a smile. Was the big company interested in her? She had only two light bulbs and a small radio. Yes, she could use more light, and maybe an iron, if it wasn't too expensive.

• **Free Advice** — The stranger took out a handkerchief and wiped off a light bulb, and the room brightened. He advised her to keep her bulbs clean and shaded, and he told her that the people who sold electric irons would sell her one for only a few pesos a month.

This visit is typical of the novel house-to-house selling now being done by Cia. Electrica Mexicana del Sureste, a subsidiary of American & Foreign Power Co., New York, which operates in several Latin American countries. About 30% of the company's Puebla customers have been visited, and appliance dealers are having trouble keeping up with the rush of orders—for radios, irons, washing machines, and electric ranges.

Cia. Electrica selected Puebla for its experiment because this town and its surrounding area—on the route from Mexico City to the Gulf —is a cross-section of Mexico, rich and poor, rural and urban.

• **Deft Handling**—One big problem was to break down the traditional suspicion that poorer Mexicans have for strangers calling at their doors. Customer representatives were carefully selected. The company also hired an old-family Puebla woman, who telephoned customers before calls.

Manager Raymond Adams sent out a letter explaining the program and preparing the customers for a visit from a "management representative." He had these letters delivered by messenger, which gave the visits added importance.

The company simultaneously sent men to stores and homes. Nearly 40% of stores found they needed something—new wiring, signs, equipment. Over 35% of homes were listed as "hot prospects."

To bring the program closer to the people, the company helped equipment outlets stage a "Refrigeration Fiesta," complete with mariachi bands, dancing, and free gifts. About 50,000 people attended. Besides refrigerators, they bought washing machines, frying pans, and 44 electric ranges.

• **The Results** — Cia. Electrica's experiment in door-to-door selling helped everyone. Appliance sales went up, and this was reflected in greater kilowatt usage—and more consumption during off-peak hours.

But the program was even more successful as public relations. The company got to know its customers —their complaints and problems. And customers lost many of their misgivings and prejudices. (*Electrical Merchandising Week, Feb 22, p12*)

How Mr. Stark Financed a

A FEW WEEKS AGO, an Argentine engineer opened a pipeline valve to give Buenos Aires its first stream of natural gas from the Campo Duran oil fields, 1700 kilometers away (map, lower right). Behind that gesture are financial trails leading over four continents. Rarely has an international project called for so complex an organization or such elaborate financial maneuvers.

The prime mover of the enterprise is Virgil Stark (picture), president of North American Utility & Construction Corp. of New York. He is largely responsible for the construction of the $200-million pipeline for Yacimientos Petroliferos Fiscales (YPF), the Argentine government-operated oil agency.

Stark heads a combine of his company's international affiliate and Fish Engineering Corp. of Houston, Texas, headed by Ray C. Fish. This partnership carried through the pipeline financing and construction without putting up more than a few dollars of its own money or assuming any of the financial risk. One U. S. banker privy to the affair calls it "the most ingenious, intelligent, and audacious plan I have seen in 25 years."

I. Filling a Gap

The Campo Duran project itself is older than Stark's participation in it. The pipeline (or rather pipelines—one for natural gas, one for liquid products) is a vital part of Argentina's plans for economic stabilization (IMD—Mar, p13). It is also the largest in Latin America. When fully operative at the end of the year, it is expected to save the country $130-million annually in foreign exchange by cutting oil imports in half.

TOP MAN in project, Virgil Stark, made rounds of banks to get funds.

• **False Start**—YPF had hired an Italian company, Techint, to begin work on the pipeline in 1956. Techint built the product line from the oil field as far as Tucuman, but did no work on the gas line.

While this work was still in progress, however, YPF realized it could not finance the project to completion. Nor could YPF, as an arm of the deficit-ridden government, get foreign suppliers or financial institutions to extend the necessary credits. It had only pesos for domestic expenditures. It needed an outside representative to arrange—privately—for foreign credits.

In April, 1957, YPF turned to foreign contractors to find one willing to undertake both the construction and the foreign financing of the project. Since contractors are hardly in a position to extend $200-million in credit, this meant the contractor himself would have to find sources of credit.

Obviously, this is not the way contracts are usually let. Yet a number of contractors did bid under the conditions imposed, because it was the only way they could get the contract.

There were several strong competitors for the job. One was a consortium of 22 British and U. S. companies. Another was Stark's combine. It bid through a local concern called Tipsa (Technica Industrial y Petrolera), a joint venture of North American and Fish Engineering employing a number of ex-YPF officials and engineers with close government connections.

• **Contract**—In July, 1957, YPF awarded the contract to Stark's combine. Stark says his group's bid was about 10% below that of the competition, and promised completion in 20 months instead of the U.S.-British estimate of three years. The award was greeted by roars of complaint, even charges of foul play, from unsuccessful bidders.

The combine still had to put in three months of tough negotiations with YPF over contract details. "But we got a good contract," says Stark. This was finally signed in October, 1957. The parties agreed the combine would have one year to arrange financing, and construction would start in October, 1958.

Immediately after signing the contract Stark posted a $10.8-million guarantee with YPF that his group would complete the work satisfactorily and on time. This Stark arranged privately in dollars with a Swiss bank.

• **Logistics and Credit**—With preliminaries out of the way, Stark and Fish had to answer two questions: "How do we go about doing this job?" and "How do we pay for it?"

The logistical requirements of the project—not the actual construction—were the chief problem. The combine had to assemble from distant points $200-million worth of engineering brainpower, labor, materials, and equipment.

Compounding the logistical difficulties were the financial aspects. Before they could buy and ship equipment, the contractors had to establish the credit of a client with slim visible assets. And since most materials were bought in European countries, they had to get funds in half a dozen currencies.

II. Setting up the Maze

The first need was an organization. To give itself corporate status the combine set up International Pipeline Constructors, S.A. (IPCO). With its favorable incorporation laws, Panama was chosen for headquarters. Panama also has no tax on income from outside the country, an obvious advantage since a good part of the profit gained in Europe, the U.S., and Argentina would later flow through IPCO.

Next, the partners set up a maze of subcontractors and subsidiaries (chart). This was done to share out the specific jobs for the project, and probably to take best advantage of tax laws of various countries.

$200-million Argentine Pipeline

• **Division of Labor** — The two partners split functions into financing, purchasing and shipping, which Stark handled, and engineering and construction, allotted to Fish. Stark was also charged with overall supervision. To do these jobs, each organized another company in Panama—North American Utility International, S.A. and Fish Engineering International Co.

Stark operated in Europe through Noricansa, S.A., of Geneva, a subsidiary of North American. And IPCO authorized Stark's New York company to operate in the U.S. For his part, Fish placed subcontracts with Fish Engineering Corp. and Fish Northwest, both located in Texas.

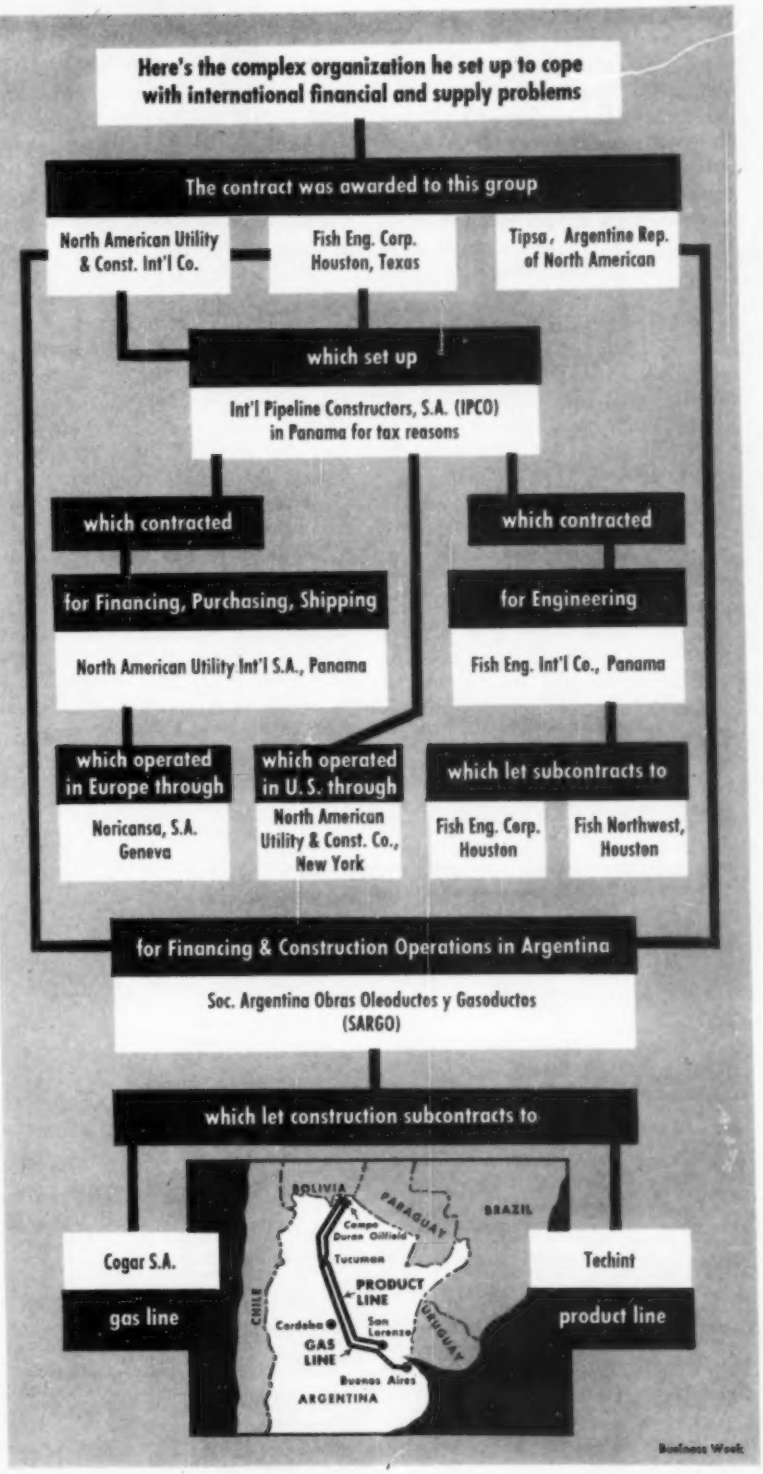
For construction and financing operations in Argentina, the combine—including Tipsa—set up Sociedad Argentina Obras Oleoductos y Gasoductos (SARGO), with Tipsa officials as managers. SARGO in turn contracted with Cogar S.A. of Argentina to build the gas line and Techint to finish its job.

III. Maneuvering the Finances

Then Stark began his maneuvers to obtain and pay for materials and equipment from outside Argentina. With the exception of the U.S., he dealt only with the "Paris Club" countries (the 11 European nations that agreed in 1957 to help Argentina amortize its commercial indebtedness). He bought in countries whose governments had facilities for insuring credits for export. And he went to banks that knew him and might be willing to take a risk.

Stark's chief weapons seem to have been personal salesmanship, boundless energy and persistence, mastery of the innumerable details involved, and timing.

• **What He Worked With**—YPF had specified it would need six years' credit to pay for the pipeline. Through the Banco Industrial de la Republica Argentina, YPF gave the combine's holding company $154-million worth of letters of credit and other instruments of payment naming IPCO beneficiary. Of this,



$115-million were for European currencies, $39-million for U.S. dollars. In addition, SARGO got $46-million for local expenditures, making a total of $200-million.

• **Financial Rounds** — IPCO invested Stark with full power-of-attorney so that he could freely place YPF's instruments of payment. Starting in Paris, Stark began making the rounds of European financial centers.

It was not always easy. Some banks doubted that YPF could meet its obligations if they granted loans. But Stark convinced a number of banks—including some of Europe's largest and most prestigious—that their risk would be small. A primary persuader here was government insurance of the credits. Stark concedes that the 1957-58 trade recession helped his cause: Banks were eager to put money to work, suppliers were eager to sell.

IV. Procedure

It took Stark two to six months to arrange each of dozens of transactions in Europe and the U.S. His task was especially difficult in the U.S., where he could not get the same governmental guarantees as in Europe. He did get $39-million in credits from several U.S. banks.

First, each order had to be separately negotiated with the supplier, bank, and government export credit guarantee department.

Then Stark, or his delegate of Noricansa, would place a firm order. The supplier, upon shipment, would present a shipping document to IPCO or else directly to the bank. IPCO then assigned YPF's credit instrument to the supplier, who was paid in full by the bank.

• **Cold Cash**—But Stark needed more than credit. He needed about $8-million in European currencies for down payments required by government insurance agencies. And to buy heavy construction equipment from the U.S.A. he needed an extra $29-million in dollars.

For his European cash needs, Stark got certain banks to give him currencies in exchange for some of YPF's instruments of payment. And for most of the U.S. dollars, he persuaded European banks to set up letters of credit in U.S. houses for an amount against which he could draw to pay American suppliers in cash. When this extra $29-million proved insufficient, he had to talk some U.S. companies into licensing European producers to manufacture the equipment—which he could pay for in European currencies.

There was another obstacle. Austrian suppliers of steel plate would accept YPF's credit notes for only 12,000 tons of the 46,000 tons Stark needed. But Stark found a Japanese company willing to sell, and ordered the rest from it. He gave a German bank YPF's instrument of payment: It paid the Japanese in yen and will be repaid by YPF in Deutschemarks.

• **Final Coup** — By July, 1958, most of the orders had been placed and arrangements for payments made. But there was one more coup. Although YPF was responsible for paying for ocean shipping, the contract stipulated Stark would arrange it. Stark broke the shipping conference rates and claims he saved YPF a tidy $12-million.

It was an expensive project, but one which brought a lot of people a lot of money. The largest single item was cost of financing. This added 7% to 10% on each purchase.

The bulk of IPCO's profit came from these purchasing transactions. It got the difference between the amount of the instrument of payment, less insurance and financial charges, and the price paid to the supplier. Stark says he is not exactly sure how much IPCO made, nor how much will be left after taxes. No doubt there will be a tidy sum. (*Business Week, Feb 6, p72*)

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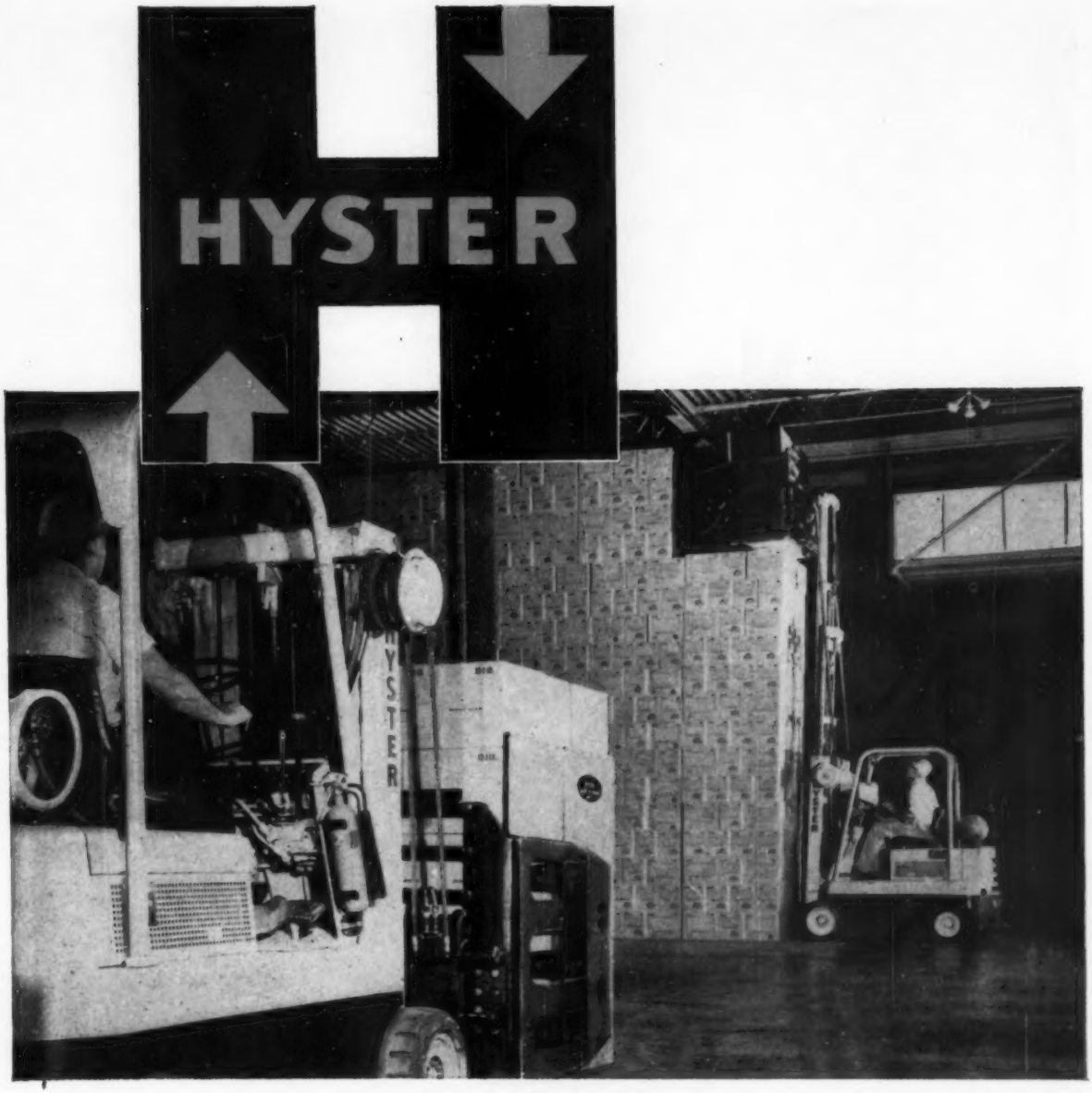

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Recommended Reading

The Latest on Plastics

Source Book of the New Plastics, by Herbert R. Simonds, provides answers about new plastic materials—properties, production, price, applications. 362 pages, $10.00. (Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., U. S. A.) . . . Marine Design Manual for Fiberglas Reinforced Plastics presents design-engineering data applicable to most reinforced plastic products—as well as boats. 400 pages, $15.00. (McGraw-Hill Book Co. Inc., 330 West 42nd St., New York 36, N. Y., U. S. A.)

Who Does What—and Where

The publishers of the Encyclopedia of American Associations have recently made available a Geographic Index which lists, by city and state, U. S. associations, professional societies, and other non-profit organizations. 174 pages, $15.00 Also there is a Directory of University Research Bureaus & Institutes, listing 1500 U. S. research centers that carry on continuing programs in specialized fields. 208 pages, $20.00. (Gale Research Co., 34th Floor, Book Tower, Detroit 26, Mich., U. S. A.)

World Taxes: Sweden

Taxation In Sweden—prepared by the Harvard Law School International Program in Taxation—is an authoritative and up-to-date survey of one of the world's most advanced tax systems, certainly from the businessman's point of view. 763 pages, $17.50. Nations already covered in the Harvard series are Australia, Brazil, Mexico, and the United Kingdom. (Little, Brown & Co., 34 Beacon Street, Boston 6, Mass., U. S. A.)

Trading with the USSR

Guide for Importers and Exporters, by R. D. F. Marlow and J. B. Scott, provides practical advice for the businessman who wishes to increase his trade with the USSR. There's a description of the Soviet trading system, as well as information on opening negotiations, strategic embargo, contract terms, patent protection, personal contacts, and business visits. 56 pages, 5s. or 70¢ plus postage. (London Chamber of Commerce, 69 Cannon Street, London E. C. 4, England.)

Bulletins from Industry

"Guide Book of Numerically-Controlled Machine Tools" answers the questions most commonly asked about automated metalworking. (Ex-Cell-O Corporation, Detroit 32, Michigan, U. S. A.) . . . "Aluminum Pig and Ingot" is a guide in the selection of aluminum alloys to meet casting requirements. (Aluminum Company of America, 726 Alcoa Bldg., Pittsburgh 19, Pa., U. S. A.)

A Close Look at Inflation

The New Inflation, by Willard Thorp and Richard Quandt, analyzes the inflationary forces in the American economy (and, by extension, in other industrial lands), discusses the relationship of various theories of inflation to production, prices, and employment. 233 pages, $5.00 (McGraw-Hill Book Co. Inc., 330 West 42nd Street, New York 36, N. Y., U. S. A.)

INTERNATIONAL
MANAGEMENT'S

Personal Business

The Auctioneer's Gavel

The most important meeting places of commerce and connoisseurship are the great international auction galleries—Christie's and Sotheby's in London, Parke-Bernet in New York. Through these salesrooms pass some of the world's greatest collections of objets d'art—everything from antique paperweights, Indian bronzes, porcelain, to Impressionist paintings and Louis XV and XVI furniture, currently the items in heaviest demand.

But if you have never attended an auction, do not be misled by the $620,400 paid for a Cezanne painting, the $385,000 for a diamond necklace. There is also a constant flow of items that change hands at between $60 and $600. And plenty of minor masterpieces go for $5,000 to $30,000, rare antiques for $2,000 or $3,000.

Whether you are interested in collecting, furnishing a house, hedging against inflation—or selling a piece or a collection—there are certain things you should know.

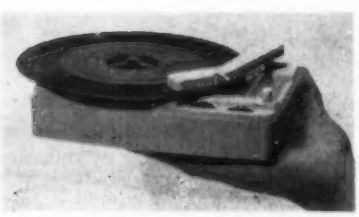
You do not have to attend the sale yourself. Many people subscribe to catalogs on one or more categories and submit bids by mail or cable. The gallery will let you know their valuation of the lot. Then you can inform them of your intention to bid, specifying a "ceiling." The gallery will probably request a letter of credit. Their houseman will bid for you. Naturally, the price will often stop below your limit.

By bidding from a distance, of course, a buyer foregoes not only the excitement of the saleroom but also the advantage of examining the lots before the sale. Much can depend on the condition of a work of art: An antique marble, for instance, may be overcleaned, or the gold background of an Italian primitive may not be original.

Nor are the auction houses responsible for the genuineness of the pieces (though they do their best). If occasionally a buyer is stung by a doubtful piece, he is just as likely to pick up a bargain next time out. That is the appeal of the auction.

If you are considering selling through a gallery, bear in mind that dealers prefer to sell "collections" rather than pieces—except for an especially valuable painting or sculpture. But single pieces can be merged with an appropriate group.

The seller pays a commission to the auction house, plus shipping and insurance. The London galleries generally charge 10% of the auction price; Parke-Bernet's commission fluctuates from 15% to 23½%. Also, the gallery may insist on negotiating a "reserve" price with you—a price below which the lot cannot be sold. If the price is not reached at the sale, the piece is returned, or it can be recommitted for sale.



More Than Meets the Eye

There is a radio as well as a record player in this transistorized Japanese bantam instrument, made by Standard Wireless Industry, Tokyo . . . And from Germany comes news of wall paintings with AM-FM or AM-Short Wave radios built in them, and controls completely hidden from view. From Planet Verlag GmbH, Braunschweig 4, West Germany.

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